DOCUMENT RESUME

ED 192 039 CE 026 484

AUTHOR	Lloyd, Anthony: And Others
TITLE	Bilingual Vocational Educational Curriculum Development.
INSTITUTION	New York Univ., N.Y. Dept. of Technology and Industrial Education.
SPONS AGENCY	Office of Education (DHEW), Washington, D.C.
BUREAU NO	498AH70195
PUB DATE	79
GRANT	G007702218
NOTE	207p.: The glossary may not reproduce well due to light type.
EDRS PRICE	MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	Adult Education: *Bilingual Education: Chinese: Curriculum Design: *Curriculum Development: French: *Instructional Materials: *Material Development: Non English Speaking: Postsecondary Education: *Readability: Readability Formulas: Secondary Education: Spanish: Test Construction: Testing: Translation: *Vocational Education
IDENTIFIERS	Bilingual Materials: *Limited English Speaking

ABSTRACT

This handbook for the bilingual vocational curriculum specialist contains seven modules which describe the process of developing curriculum materials to be used by students of limited-English-speaking ability. Module 1 is an introduction to the handbook which discusses bilingual education in the United States and the role of the teacher in bilingual education. Module 2 concerns the general principles of curriculum development for vocational education subjects. It outlines these phases: preparatory, assemble and critique resources, prepare cultural profile, develop curriculum plan, establish curriculum design, preparation of trial modules, critical review of trial modules, complete curriculum product, and reality test product. Module 3, Readability: Language and Style, describes considerations and procedures for writing materials in simplified English. Module 4 deals with translation of materials. Module 5 discusses testing minority students and constructing linguistically fair tests. Examples are given in English, French, Spanish, and Chinese. Module 6 lists resources. Appendixes (Module 7) include an article on cognitive styles and culture and a glossary. The glossary, amounting to approximately half of the handbook, is a restricted list of words suitable for writing vocational materials. The fewer than 700 words are presented in English, Spanish, French, and Chinese. (YLB)

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BILINGUAL VOCATIONAL EDUCATION

CURRICULUM DEVELOPMENT

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CE 026 484

Developed and disseminated pursuant to
Grant No. G007702218
from the
U. S. Office of Education,
Vocational Education Act, 1976

by
**The Bilingual Vocational Education
Curriculum Development Project**

Department of Technology
and Industrial Education

NEW YORK UNIVERSITY
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New York, New York 10003

1979

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preface

Who is a bilingual vocational curriculum specialist? That person is preferably bilingual or, at least bicultural, who may function in one or a number of different capacities: instructor, department chairperson, principal, state or local director of vocational education, or curriculum coordinator.

In order to use these modules, that specialist will have a number of responsibilities:

Formation of an advisory group composed of bilingual parents and students, administrators, and teachers

Coordination of local decision making

Supervision of writers

Supervision of translations

Coordination of materials production

The tasks outlined in these modules constitute a guide for teachers and administrators who have to face the problem of a lack of materials, suitable for use in vocational classes for students of limited English proficiency.

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acknowledgements

The project director and authors wish to express their appreciation for the patient and enduring help and constructive suggestions given by Mary Sandy and Sharron Lewis during the preparation of the copy. Mr. Chih Chen Lin was especially helpful in coordinating the Chinese language sections and helping the authors understand some of the vagaries of English-Chinese translation.

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MODULE ONE

INTRODUCTION

The function and purpose of bilingual education in the United States have become the object of some controversy, with extremists on one side claiming that in an English-speaking society no such thing as bilingual education has a right to exist, while those on the other extreme seem to see it as a means to insulate students from the predominant English-speaking language and culture. Both views, however, are untenable: the United States is a nation in which 81 languages are spoken by 25 principal and numerous subsidiary ethnic groups; some of those groups constitute sizable minorities;[1] economic activities, however, are overwhelmingly conducted in English.

It follows that unless a person can function in English, employment opportunities are limited, and that non-English-speaking persons are for that reason disadvantaged. The following U.S. Department of Labor figures compare workers of Spanish origin with other segments of the population, but they also can be taken as representative of the situation of other language minorities in the United States. Figures for Puerto Ricans have been listed separately to show that at least some language minorities are comparable with blacks, who are often thought of as the most disadvantaged segment of the population. (Tables 1-4).[2]

Men and women of Hispanic origin have somewhat lower unemployment rates than blacks. Puerto Ricans, however, have about the same unemployment rates as blacks, as shown in Table 1.

	All Persons	Spanish Origin	Puerto Rican	Black	White
Men	7.8	10.7	14.2	14.6	7.2
Women	8.5	12.5	13.9	13.1	7.9

Table1. Unemployment rates (percent of labor force) by sex and race, March, 1976.

Table 2 shows that the median income of families headed by a person of Hispanic origin falls between that of whites and blacks. In the case of Puerto Ricans, however, the average income is less than that of blacks.

All Families	Spanish Origin	Puerto Rican	Black	White
$13,719	$9,551	$7,291	$8,779	$14,268

Table 2. Median family income in 1975, by race of family head.

Likewise, Hispanics are almost as likely as blacks to have incomes below the poverty level, and Puerto Ricans are more likely to be below the poverty level, as shown in Table 3.

All Persons	Spanish Origin	Puerto Rican	Black	White
10.3	22.6	27.8	25.9	8.4

Table 3. Percent of persons, age 16 and over, below poverty level in 1975.

The assumption that the lower economic attainments of minority language persons are due at least in part to language difficulty is strengthened by an examination of the figures for education (Table 4).

	All Pers.	Span. Orig.	Puerto Rican	Black	White
8 years or less	10.7	31.5	31.5	18.9	9.8
1-3 years H.S.	17.1	19.7	23.5	24.3	16.4
4 years H.S.	39.8	30.9	33.4	36.8	40.3
1-3 years college	16.0	11.1	7.8	12.0	16.4
4 years or more college	16.5	6.8	3.8	8.1	17.2

Table 4. Years of school completed by labor force participants, by race, March, 1976.

Clearly the less time minority language persons spend in school, the more likely they will be to lack English-language competencies, and to lack marketable skills.

It appears then, that the economic situation of language minorities in the United States is the result of a vicious circle compounded of limited skills, limited expectations and, no doubt, discrimination. The most practicable point at which to break the vicious circle is at the educational stage, by making an effort to provide English-language ability and marketable skills. Hence bilingual vocational education, to provide those skills to persons who, for whatever combination of circumstances, find themselves as unskilled non-English-speakers in the English-speaking economy of the United States.

BILINGUAL VOCATIONAL EDUCATION IN PRACTICE

The question that arises is how bilingual vocational education should be put into practice. The answers that form the underlying assumptions of this Handbook may not satisfy the purists of bilingual education; they have, however, the virtues of being a practical approach to the problem.

It is assumed that it is not desirable to segregate students of limited-English-speaking ability in classes for English as a Second Language, but that they should rather be integrated as soon as possible into the learning activities of their fellow students. This can be done by providing ESL courses concurrently with skills courses.

The skills courses would require student materials written in a simplified kind of English, with limited vocabulary and grammatical structures, to facilitate both understanding on the part of the students and translation into the students' native language. Such translations would serve as a support for and reinforcement of the English-language materials; the need for translations would presumably diminish as the English-language proficiency increases.

There need be no direct connection between the students' ESL courses and their occupational courses; in fact, it would be difficult to the point of impracticality to design an ESL course that somehow marched in step with the requirements of a skills course. The relationship of the skills course to the students' language learning lies in the linguistic nature of the curriculum materials, which would serve as a reinforcement of basic structures and vocabulary. These, together with the technical terms of the particular skills area, would constitute a kind of job English complementary to broader aims of ESL.

HOW TO USE THIS HANDBOOK

The purpose of this Handbook is to describe the process of developing curriculum materials to be used by students of limited-English-speaking ability. It has a section on the general principles of curriculum development for vocational education subjects. There is also a section that describes considerations and procedures for writing materials in simplified English; for this purpose there are descriptions of grammatical structures and a glossary, a restricted list of words suitable for writing vocational materials. The glossary was developed from the trial writing of the materials that were written concurrently with this

Handbook and from the study of lists of English words of frequent occurrence. There are fewer than 700 words in the glossary; the writing of curriculum on any particular vocational skill would probably involve use of only a limited number of those 700, apart from technical words relating to the subject skill. By following recommendations of this Handbook, you will be able to control the characteristics of the materials you develop and the readability of the English in which you present your materials.

The Handbook also contains sections dealing with the translation of your materials and with testing minority students.

THE ROLE OF THE TEACHER IN BILINGUAL VOCATIONAL EDUCATION

The instructor of such a course, although preferably having some knowledge of the native language of the limited-English-speaking students, will very probably be a monolingual English speaker because very few bilingual vocational education teachers have been trained up to the time of writing. In such a situation, he/she will have to use the assistance of a paraprofessional who can speak the students' language. The role of the instructor, apart from what is normally expected in teaching an occupational class, will be to reinforce the students' English-language learning by taking care, in oral teaching, to use simple English structures and a restricted vocabulary. In doing so, the instructor will not only be more effective in teaching skills to limited-English-speaking students but will also reinforce the basics of their English-language learning.

The instructor must also be able to recognize culturally differentiated behavior on the part of the students from different language backgrounds and thus try to avoid misunderstandings that may hinder the instructional process. Such misunderstandings can be particularly damaging because they can cause emotional situations in which participants make hasty and ill-based judgments about one another. For guidance in multi-culural situations, Edward T. Hall's books *The Silent Language* and *The Hidden Dimension* are good introductions to the kinds of factors to be aware of. However, an area of education such as this is full of unknowns, and no one is going to be perfect. But it will be helpful to be ready for anything.

The instructor must be prepared for variation in the area of learning styles also. The instructor may at first have to adapt his/her mode of teaching to what the students may have been previously used to. They may have been accustomed in their country of origin, for example, to a learning style more passive and regimented than what is usual in the United States. In such situations, the instructor must aim to accustom students to the kind of teaching and learning that they will have to deal with in the United States, so that they will function more effectively.

This is not to say that the instructor is required to try to deculturalize students; the instructor's task is to help equip students with occupational, language and learning skills that will enable them to cope with the English-speaking culture in which they find themselves so as to enjoy a greater measure of economic choice than they might otherwise have been able to attain.

MODULE TWO

CURRICULUM DEVELOPMENT

PREPARATORY PHASE

Select Advisory Committee

Initially the only persons who are involved in the curriculum development process are those on the CURRICULUM STAFF.

The CURRICULUM STAFF is usually made up of that group of people most intimately involved with the curriculum development process *i.e.* teachers, department chairpersons, administrators, para-professionals, supervisors, and you the reader. You are presumable aware of the topic(s) or subject(s) you wish to write about and have some notion as to the students' requirements and reading levels. That is not, however, enough information to work with. Before you can begin, you should appoint an *Advisory Committee.*

The *Advisory Committee* is a group of lay persons who will work with you as volunteers in your curriculum work. It is wise to work with an *Advisory Committee* because its members can give you opinions based on perspectives that have been acquired outside of the school system itself. Since you are developing curriculum for bilingual persons, your committee should have representation from the bilingual community in direct proportion with their numbers in the community as a whole. Select your

committee members well. Most people are willing to be a part of curriculum work so long as these conditions are met:

- Their roles and expectations for their involvement are clearly defined.
- Their input and reaction receive consideration.
- Their involvement is sought honestly.
- Their unfamiliarity with the language of education is dealt with directly and sympathetically.

The *Advisory Committee* will have these main functions:

- To react to the *Curriculum Staff's* proposals, products, and perspectives.
- To provide ideas, data, and alternative perspectives.
- To react to the goals, course objectives, content outline, general strategies, and evaluation instruments.
- To participate in the Needs Assessment.

NOTE: An *Advisory Committee* should not be expected to react to such concerns as specific content, instructional strategies, logistics, instructional objectives and other concerns.

Summary of Preparatory Steps:

appoint *CURRICULUM STAFF*
Choose *Advisory Committee* members

Phase I - Establish Overall Objectives and Design Parameters

	Curriculum Staff	Advisory Committee
Examine Requirements	Select Participants for Needs Assessment	
Establish Course Objectives	Prepare Needs Assessment Questionnaire	
	Administer Questionnaire	
	Synthesize Responses	
	Establish Curriculum Design Design Parameters	

Once the members of the *Advisory Committee* are identified and briefed as to their roles, the *CURRICULUM STAFF* can begin to work toward the major goals to (1) establish course objectives, (2) establish the curriculum design parameters and

(3) do a Needs Assessment. You will note on the chart accompanying this phase that tasks (1) and (2) take place concurrently with task (3). However, for purposes of clarity each of those procedures and requisite tasks will be described separately.

1. *Examine the Curriculum Requirements.* The overall curriculum requirements can be jointly accomplished by the *CURRICULUM STAFF* and the *Advisory Committee*. If you follow the steps outlined below you will be able to put together a list of requirements for your curriculum.

Look at State requirements.

Determine over what period of time the subject will be taught.

Determine standards that are acceptable to the trade in terms of quality, procedures, use of supplies, tools and equipment.

Determine safety requirements.

Examine existing Task Analysis documents.

2. *Establish Course Objectives.* The objectives of the course suggest a pattern of organization for a specific course. They list in broad terms what will be taught, and may correspond to chapter headings. They consist of as many items or statements that are necessary to describe what you want the student to be able to do at the end of the course. They should be stated so clearly that any member of the curriculum staff, or any teacher can read them and know what a student should be able to do at the end of the course. These objectives, then, should have the following characteristics:

Course Objectives list the kinds of things the student should be able to do at the end of the course.

Course Objectives are a clear statement of the instructional intent.

Course Objectives list course content.

Course Objectives list general strategies.

While the *CURRICULUM STAFF* and the *Advisory Committee* are working on the course objectives they should be conducting a Needs Assessment. The following pages defining Needs Assessment and describing the process were extracted from the Handbook entitled *Bilingual Vocational Modification and Translation Manual,* also written at New York University.

You will note that this type of Needs Assessment helps you to determine what form your materials ought to take.

After having administered the questionnaire and synthesized the responses, you will have reached the end of Phase I. At this point, the *CURRICULUM STAFF* should have concrete ideas about the course objectives and what form the material will take.

Summary of Procedures to establish the Overall Objectives and the Design Specifications:

Examine curriculum requirements

Establish course objectives

Conduct needs assessment

Synthesize responses

Getting started

Needs Assessment is the first of several major steps taken in the preparation of curriculum materials for use in bilingual programs. You should determine the discrepancy between what you believe to be the most productive form of bilingual learner materials and the actual form that existing materials take. A needs assessment provides that first step, namely, determining the form of the bilingual materials you are going to produce. Assessment of needs is divided into the seven categories of content, objectives, illustrations, activities, format, organization, and language.

Before you can determine the form your bilingual materials will have, several preparatory steps must be taken.

1. Select participants

☐ Identify those persons who will participate in the needs assessment activities, *i.e.*, those groups and individuals who develop, implement, use, and have an interest in the bilingual learner materials.

☐ Work with your advisory committee to select participants for the needs assessment activities.

☐ Develop a communications network or team between the different groups (students, teachers, parents, etc.) using key influence people within each group.

☐ Prepare the needs assessment questionnaire for use with the participants. Print or duplicate an adequate number of questionnaires.

2. Administer questionnaire

☐ Arrange meetings with the participants.

☐ Administer the needs assessment questionnaire following the instructions on the form.

3. Synthesize the responses

☐ Collect and score the questionnaire using the following instructions.

How to use the questionnaire

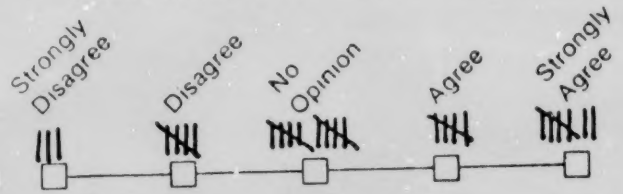
At the end of this module you will find two sample questionnaires: one to be administered to those teachers and administrators who have been chosen to participate, the other to be administered to those parents and students who have been chosen to participate.

When the questionnaires have been completed and returned to you, use the following procedure to find out what the questionnaires are really telling you.

How to determine what the needs assessment questionnaire tells you

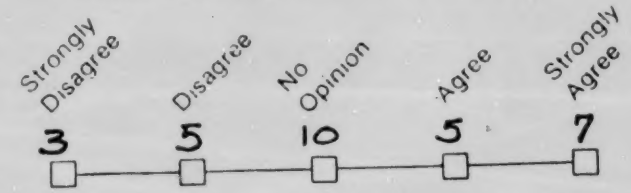
When the questionnaires have been returned to you, go through them and count the number of responses. Record them on a blank questionnaire. At this point your Response Chart should look something like this:

Content should depend heavily on illustrations.



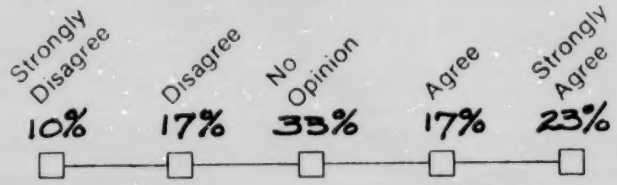
After you have tallied all of your responses for each item in this elementary fashion, add up the responses and record on yet another blank questionnaire. Your new Response Chart will look something like this:

Content should depend heavily on illustrations.



So far you know the opinions of your respondents in numerical terms. Now it is relatively simple to determine the percentage of respondents. When you have done so record the percentage of each opinion on another blank questionnaire. Your new Response Chart should look something like this:

Content should depend heavily on illustrations.



If you have chosen to administer the same questionnaire to teachers, administrators, students and parents, you have now completed your Needs Assessment Response Chart.

If, however, you have chosen to administer the somewhat simplified questionnaire to students and parents, you will now have two Needs Assessment Response Charts, one from the questionnaire administered to teachers and administrators and the other from that administered to parents and students.

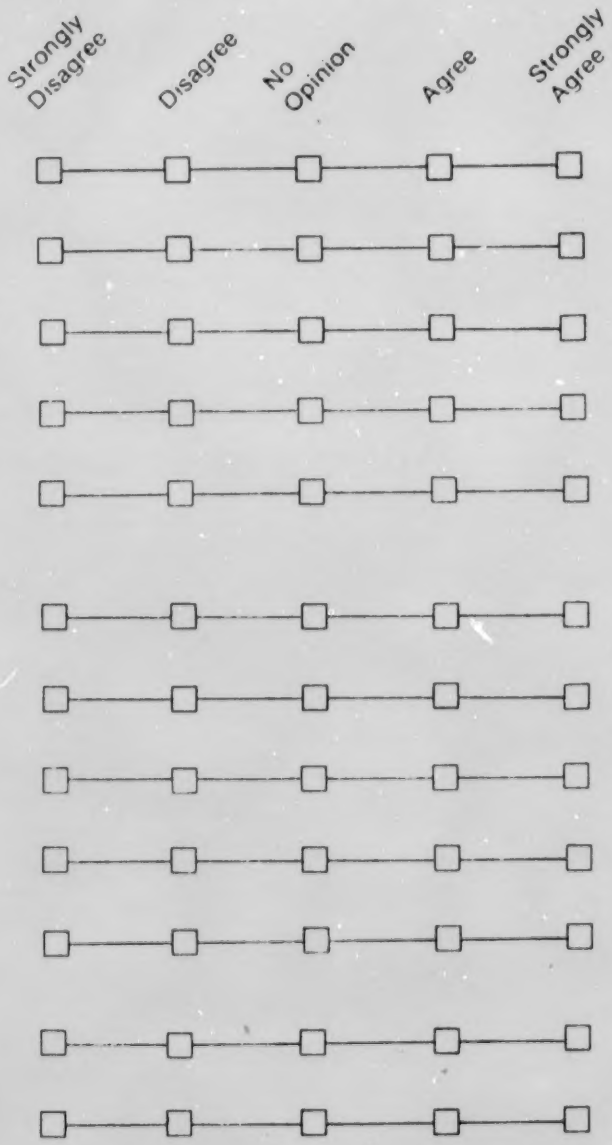
Now compare the responses on those two Charts. If you find that there is a marked disagreement in percentage of responses on a question or questions, the most practical solution would be to ask the advisory committee for recommendations.

So far you have learned how to conduct a Needs Assessment and record the results. Those results should establish what types of bilingual learner materials the respondents would like to have produced.

Below you will find a sample questionnaire that you can administer to teachers and administrators to find out the form the bilingual learner materials should take. The opinion ranges from left to right *Strongly Disagree*, *Disagree*, *No Opinion*, *Agree*, and *Strongly Agree*.

NOTES:

NEEDS ASSESSMENT QUESTIONNAIRE



Content

Ideas and concepts should be presented in a simple manner.

Complex concepts should be broken down into a number of simple concepts.

Content should depend heavily on written text.

Content should depend heavily on illustrations.

Content should contain balanced proportions of written text and illustrations.

Objectives

Objectives should be consistent with content.

Instructional objectives should clearly specify for the students what is to be learned.

Objectives should explain to the students how they are going to demonstrate their learning.

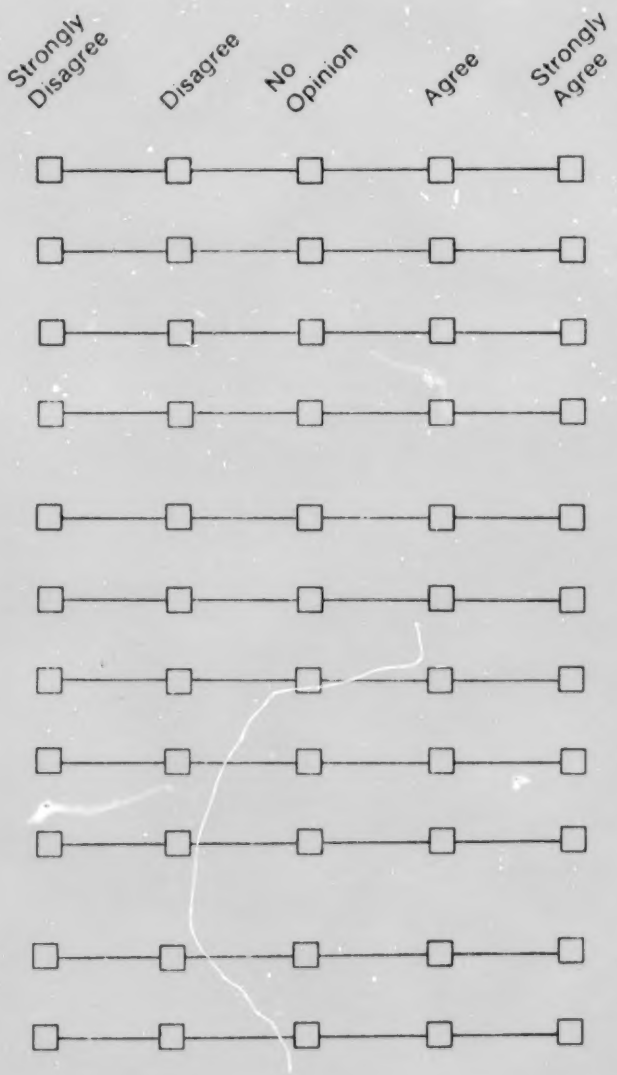
Objectives should include a statement of criteria to be used in evaluating students' performance.

Objectives should be stated in behavioral terms.

Illustrations

The illustrations should be appropriately placed in relation to textual materials.

The illustrations should be appealing.



NEEDS ASSESSMENT QUESTIONNAIRE (cont'd)

Illustrations (cont'd)

The illustrations should be uncluttered.

The illustrations should be colorful.

The illustrations should have multi-racial representation.

The illustrations should not be sexually stereotyped.

Activities

The activities should be project oriented.

The activities should be clear to students.

Activities should clearly indicate to students what they are to do to put their knowledge of content in effect.

The activities should be presented in an understandable way.

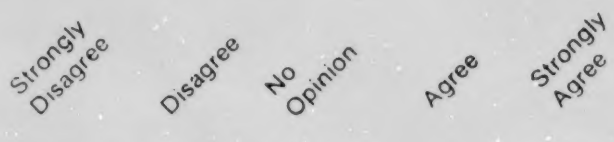
The activities should be student oriented.

Format

Format should be readable.

The layout of the materials should not be distracting.

NEEDS ASSESSMENT QUESTIONNAIRE (cont'd)



Organization

The order of the materials should be sequential.

The emphasis of the materials should be on theory.

The emphasis of the materials should be on practical aspects.

The materials should present a combination of theoretical and practical aspects.

The materials should provide for teacher-led learning activities.

Materials should provide for group student learning activities.

Materials should provide for individual student learning activities.

Language

The style of the materials should be understandable.

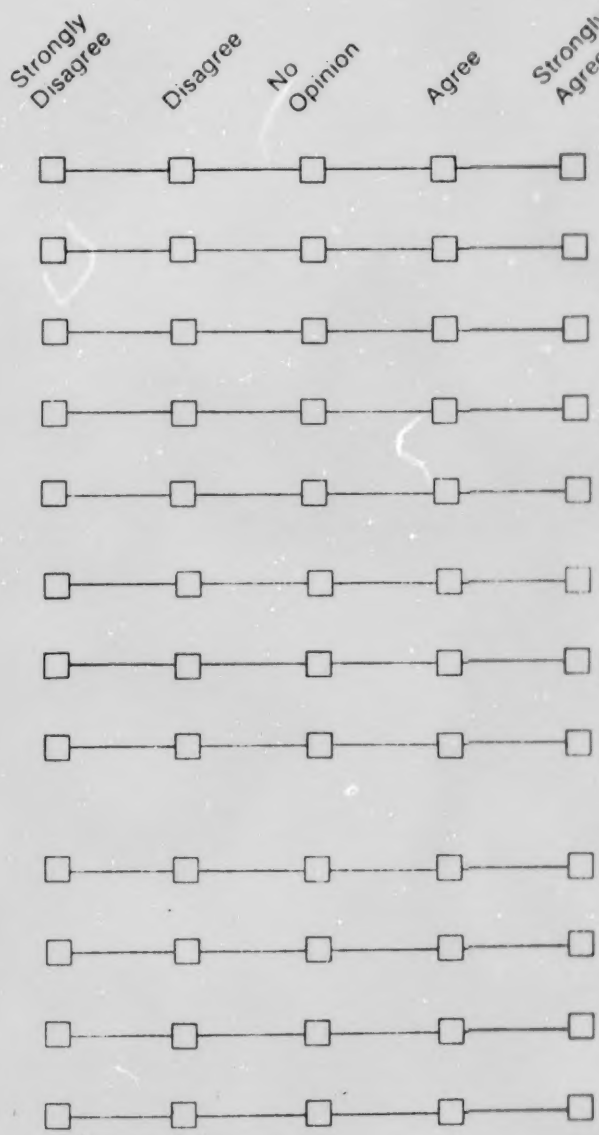
The materials should be free of superfluous details.

The materials should be written in simple sentences (simple = 1 main clause; complex = 2 or more main clauses with or without dependent clauses).

The materials should be written with consistent verb forms.

Materials should be written at least at grade level.

NEEDS ASSESSMENT QUESTIONNAIRE



Content

Contents should be presented in a simple manner.

Complex concepts should be broken down into a number of simple concepts.

Content should depend heavily on written text.

Content should depend heavily on illustrations.

Content should contain balanced proportions of written text and illustrations.

Analogies and examples used in the materials should be familiar to the students.

Students should be accustomed to textual materials with few illustrations.

Students should be accustomed to materials with many illustrations.

Organization

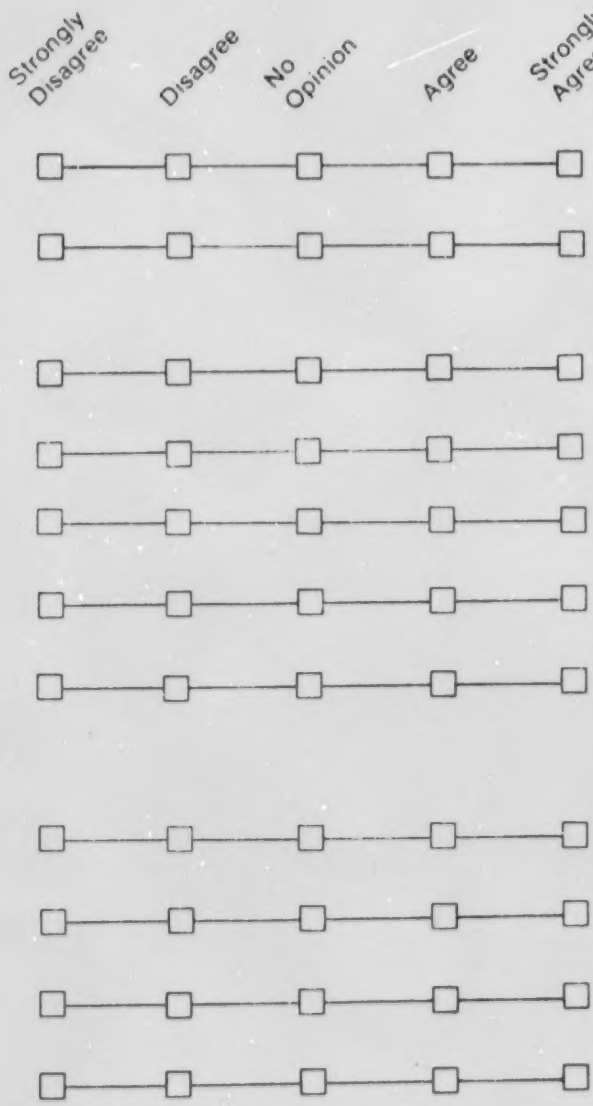
The order of the materials should be sequential.

The emphasis of the materials should be on theory.

The emphasis of the materials should be on practical aspects.

The materials should provide for teacher-led learning activities.

NEEDS ASSESSMENT QUESTIONNAIRE (cont'd)



Organization (cont'd)

Materials should provide for group student learning activities.

Materials should provide for individual student learning activities.

Language

The style of the materials should be understandable.

The materials should be free of unnecessary details.

The materials should be written in simple sentences (simple = 1 main clause; complex = 2 or more main clauses with or without dependent clauses).

The materials should be written with consistent verb forms.

Students should be able to read at least at grade level.

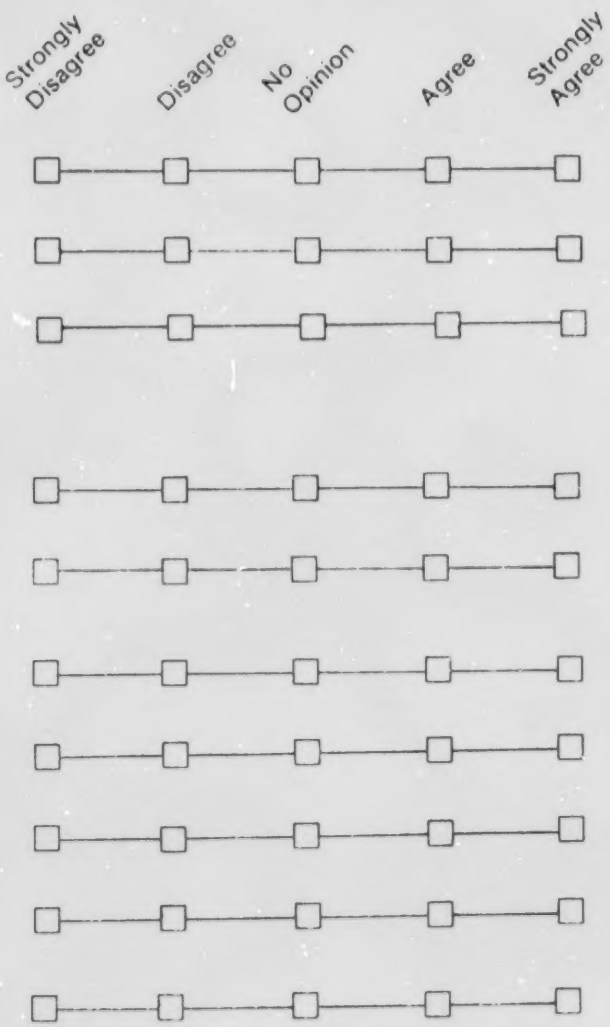
Illustrations

The illustrations should be placed next to textual materials.

The illustrations should be uncluttered.

The illustrations should be colorful.

The illustrations should have multi-racial representation.



NEEDS ASSESSMENT QUESTIONNAIRE (cont'd)

Illustrations (cont'd)

The illustrations should be appealing according to the students' culture.

The illustrations should contain colors that are acceptable in the students' culture.

The illustrations should show male/female students at other than traditional roles.

Format

The way it is represented should be readable.

The layout of the materials should not be distracting.

Activities

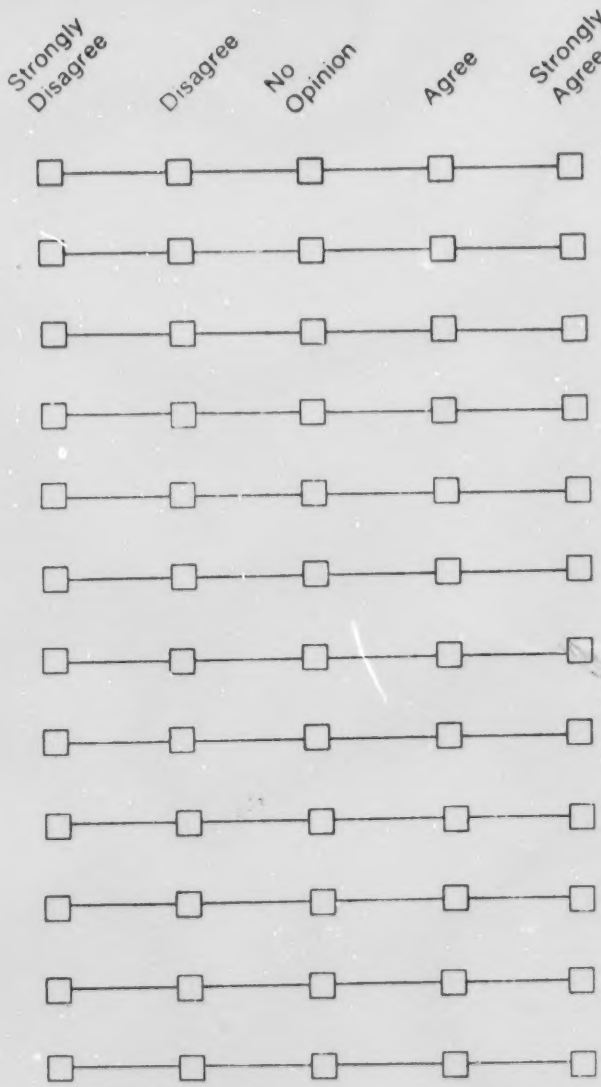
The activities should be project oriented.

Activities should clearly explain to students what they are to do and how to use what has been learned.

The activities should be presented in an understandable way.

The activities should be student oriented.

The activities should be clear to students.



NEEDS ASSESSMENT QUESTIONNAIRE
(cont'd)

Phase II
ASSEMBLE AND CRITIQUE RESOURCES

Curriculum Staff

Assemble Resources

Draft Resource Assessment Criteria

Apply Criteria to Resources

Data Bank of Acceptable Resources

1. *Assemble Resources.* It is now necessary for the CURRICULUM STAFF to take an analytical and close look look at the available resources that will be used as references for writing. These would include text books, manuals, job sheets, military manuals and curricula available through other schools and the State Department of Education. Once you have assembled a number of resources to work with, you and the staff will have to develop some criteria to enable you to assess the usefulness of each item. What you will really be doing is deciding which parts of each resource would or would not be useful for the purpose of writing the particular curriculum you have in mind.

2. *Draft Resource Assessment Criteria.* The *CURRICULUM STAFF* and *Advisory Committee* already know the Course Objectives and what form the Curriculum should take. Now, instead of writing totally from the beginning, you need to be able to use some information already in existence. In order to do that, the CURRICULUM STAFF will have to draft a series of statements that can be applied to any resource at hand. You will therefore have to have some formalized way to assess the usefulness of the resources at hand. The following statements should describe at least some of the resources before you can assume you are ready to begin writing.

The resource contains Course Objectives that closely match those drawn up by the CURRICULUM STAFF.

The content of the resource matches the required curriculum content.

The resource requires the same equipment, space, etc., that you have available.

The resource contains practical activities that are replicable within your curriculum.

The resource shows several good examples of clear writing that you would like to emulate.

The resource contains several examples of illustrations that are particularly understandable and technically clear.

The resource presents information in logical order.

The resource contains useful lists of Course Objectives.

After applying the criteria to your resources you will have eliminated those unnecessary items and you will have assembled a data bank from which to work, Use of this data bank does not preclude original writing, but it does give you a firm base upon which to build.

SUMMARY OF STEPS TO ASSEMBLE AND CRITIQUE RESOURCES:

Assemble resources

Draft resource assessment criteria

Apply assessment criteria

Assemble data bank

PHASE III - PREPARE CULTURAL PROFILE

Curriculum Staff

Advisory Committee

Assemble Data for Cultural Profile

Develop Cultural Profile

Before you can go on to the writing of your materials, there is one important thing to do: the preparation of a cultural profile. This is a compilation of cultural information about your bilingual students and students of limited-English-speaking ability. This information must be borne in mind at all times when you are writing materials; it will also be very useful for teachers of those students. This section tells you how to prepare a student profile.

Potential Differences among Learners

Though all learners can posess basic human characteristics which are similar, they can also differ in race, culture, language, and socio-economic status. When working with bilingual students and students of limited English proficiency, it is especially important to keep in mind the linguistic and cultural differences an instructor may encounter in the classroom.

LANGUAGE- Bilingual students are those who speak both English and their native language well but may not read both languages equally as well. A student of limited English proficiency cannot speak or understand or read English well.That student may or may not read his/her native language well.

CULTURE- Though individuals differ within a given culture , in order to discuss differences between cultures, it will be necessary to generalize somewhat. When discussing students from a distinct culture, it should be remembered that culture influences a person's attitudes in several ways. Culture determines the following:

attitudes toward the nature of work and play

role expectancies and behavior

styles of learning and coping

attitudes toward order

attitudes toward acceptable dimensions of action and noise

perspectives on time and space

attitudes toward sex role stereotyping

Depending upon the students' native culture, these dimensions will differ, and what might be ignored or accepted by one culture may be condemned by another. It is most important that value judgments are not made about manifestations of cultural differences. Frequently preoccupation with content will blind a teacher to the possibility that miscommunication may be occurring due to cultural differences. It is therefore incumbent upon the curriculum developer who is preparing curriculum for students from distinct cultures to remember that culture cannot be erased or changed; it is deeply embedded in each person. It can, however, be understood. This undestanding can be built into a curriculum.

To achieve such understanding, you must first be aware of the national and language background of the students for whom you are preparing bilingual materials. For this you should obtain the information listed here as baseline data.

BASELINE DATA

Prepare answers to the following items in order to determine Baseline Data:

Number of bilingual students

Number of students of limited-English-speaking ability

Number of both types in vocational education

The language(s) spoken in the home

Reading levels in English and in the target language

Number of bilingual teachers available

Number of bilingual paraprofessionals available

The subjects that would most interest the bilingual students and limited-English-speaking ability students

The percentage of bilingual students and students of limited English proficiency in each vocational education class

The percentage of bilingual and limited-English-speaking ability students taught apart from their monolingual peers

The country/countries of origin of the students

After you have obtained the Baseline Data, you will be able to go on to determine the students' cultural characteristics that you will have to take into account when writing your materials.

Culture affects some of the seven categories of the Curriculum Design specifications described later in this module. Those categories that are affected by culture are listed below with a series of descriptive statements. Those statements describe cultural characteristics that may or may not manifest themselves in the particular culture of your students. In describing your students' culture you will probably have to engage in some stereotypical generalities. Nevertheless, most of your students will fall within one description or another.

The following statements, though not all-inclusive, will serve to describe students from other than the

North American Anglo culture. Check "Yes" or "No" according to whether they apply to your students or not. All of the "Yes" statements constitute a cultural profile. In order to incorporate the cultural needs of your students, as described in this profile, in your curriculum, refer to Phase V of this Module.

CULTURAL CHECKLIST

(Objectives)

Yes No The students are unaccustomed to behavioral objectives.

Yes No The students are accustomed to rote learning.

(Activities)

Yes No The students come from a culture that places emphasis on teacher-led activity.

Yes No The students come from schools where they were not permitted to touch the equipment.

Yes No The students are unaccustomed to being allowed to make mistakes and admit it by asking questions.

Yes No The students are unaccustomed to being encouraged to ask questions or volunteer information.

Yes No The students consider that group activity is for play.

Yes No The students prefer to organize themselves spatially (in circles, in rows, around tables) differently from most U. S. students.

Yes No The students are unaccustomed to being asked to perform.

Yes No The students are unaccustomed to speaking out in public.

(Content)

Yes No The students are from a technically naive background.

Yes No The students have stereotyped ideas about who should do what work.

(Illustrations)

Yes No The students are unaccustomed to using diagrams.

Yes No The students' culture considers some colors "taboo."

Yes No The students are unaccustomed to seeing girls in male-type work clothes.

Yes No The students are unaccustomed to seeing girls working with boys.

(Assessment)

Yes No The students' concept of time is different, influencing their ability to take tests under time constraints.

Yes No The students are accustomed to testing by means of essay questions.

Yes No The students are unable to write answers to test questions in English.

Yes No The students are unaccustomed to multiple-choice or true/false type questions.

Yes No The students are unaccustomed to being asked to perform for others.

(language)

Yes No The students are unable to read or write at grade level in English, but are functional in English.

Yes No The students are unable to read or write well in English, and cannot speak it well.

SUGGESTED METHOD OF DETERMINING CULTURAL CHARACTERISTICS

Since cultural characteristics are not as clear-cut as other concepts expressed in this Handbook, there could be any number of ways of ascribing a particular set of characteristics to any specific group of students. Stereotyping is of course unavoidable but useful here, since there is some truth in stereotyping. One practical approach is to involve the teachers currently working with the students for whom you are writing. This will involve two or three work sessions that will proceed in this order:

WORK SESSION ONE

Present the checklist of cultural characteristics listed in this module to the teachers. Warn the teachers that you are aware of stereotyping but that for purposes of discussion it is unavoidable. Avoid negative stereotyping. Encourage the teachers to exchange information on their impressions of those characteristics which they feel apply to their students.

Ask the teachers to take the checklist with them to monitor their students in class during a specific length of time (2-4 weeks).

WORK SESSION TWO

Discuss individual teacher's findings.

Correlate all the teachers' findings, and identify some generalities.

Use the list of agreed-upon characteristics to write your trial modules.

WORK SESSION THREE

Review the characteristics once more.

Demonstrate how those characteristics have been incorporated into the Modules.

Record teacher feedback.

SUMMARY OF STEPS FOR THE PREPARATION OF A CULTURAL PROFILE:

Collect data

Prepare cultural checklist.

Develop profile.

PHASE IV - DEVELOP CURRICULUM PLAN

Curriculum Staff

Apply Course Objectives

Develop Curriculum Plan

At this stage, the CURRICULUM STAFF must take course objectives developed in Phase I and apply them to the development of the curriculum plan.

The course objectives were derived from an examination of requirements in the skills area that you are dealing with. The course objectives will themselves constitute the main outlines of the curriculum plan, but you will also have to give thought to the following procedures to arrive at the curriculum plan.

1. DETAILED EXPANSION. The course objectives will probably be stated in terms that are too general to constitute an adequate curriculum plan. They will, however, serve as headings for the main sections of units of the curriculum. You will have to analyze the subject matter involved in each heading in order to list appropriate sub-headings, which will then constitute the modules.

The criterion for the identification of modules is that each must deal with a coherent and related group of skills. Lessons, the sub-divisions of modules, deal individually with those skills.

2. SEQUENCE OF PRESENTATION. The order in which curriculum materials are presented can depend on factors such as whether the teaching of skills is to progress from the theoretical to the practical, or from specific to general; it can also depend on more concrete factors such as the order in which supplies, tools and equipment are to be used, or their availability. It is probably true that there is no one ideal sequence for presenting a skills course, so that in this area there is room for choice in decision making.

In order to arrive at a plan for the curriculum materials, the CURRICULUM STAFF must do the following:

Examine course objectives

Derive main headings of curriculum (units)

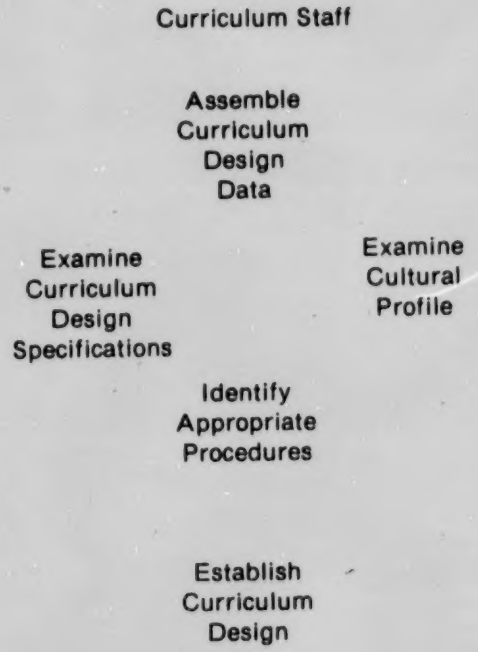
Analyze units for modules (skill groups)

Subdivide modules to arrive at lessons (individual skills)

Decide on sequence of presentation

Modify existing sequence if necessary

PHASE V -
ESTABLISH THE CURRICULUM DESIGN



The curriculum design differs form the curriculum plan set up in Phase IV in that the curriculum plan constitutes the arrangement of the units, modules and lessons that make up the curriculum; while the curriculum design is a description of the procedures necessary to achieve the desired curriculum characteristics. Information about this is derived from two previously established sets of data: the curriculum design specifications derived from the Needs Assessment (Phase I), and the cultural profile (Phase III). The following pages show how to translate those sets of data into appropriate curriculum-writing procedures.

1. ASSEMBLY OF CURRICULUM DESIGN DATA. The two sets of data you have to consider are the curriculum design specifications and the cultural profile.

2. IDENTIFICATION OF APPROPRIATE PROCEDURES To establish the curriculum design you must first identify the appropriate curriculum-writing procedures for achieving the desired curiculum characteristics. This section provides guidance on how to do that; it contains items that correspond to the curriculum design specifications and the cultural profile. Opposite each item there are corresponding procedures. Items from the curriculum design specifications are given first. (Since the category of language needs more extensive treatment in the context of writing for students of limited English proficiency, it is dealt with separately in Module 3, which should be read concurrently with this section.) Not all items will apply to any particular teaching situation. Identify the items and procedures corresponding to your particular curriculum design specification and cultural profile.

TO ENSURE that your materials fulfill the design specifications requirement that:	YOU MUST:
OBJECTIVES:	
Objectives should be consistent with content.	Analyze the required content to determine information, concepts, supporting information and activities in the content.
Objectives should explain to the students how they are going to demonstrate their learning.	Formulate objectives to correspond with the identified concepts, supporting information and activities.
	State actual behaviors to be employed in demonstrating mastery of the objectives (e.g. "to make" or "to put").
Instructional objectives should clearly specify to the students what is to be learned.	Specify the product of the performance of the results of the behaviors which will be evaluated to determine whether the objective has been mastered (e.g. "a construction" or 'a design').
Objectives should include a statement of criteria to be used in evaluating students' performance.	State the relevant conditions under which the behaviors are to be performed (e.g. "in a one-hour quiz" or "in front of the class").
	State the standard to be used to judge student performance (e.g. "four out of five correct").
Objectives should be stated in behavioral terms.	Formulate objectives that include an action verb that denotes the desired behavior(s).
	Consider terms such as those included in the list at the back of this module.

ACTIVITIES

Activities should be project oriented.	Include tasks that are task oriented either for an individual or for a group. Depending on the target culture, it may be better to make most activities either individually oriented or group oriented. Include conditions under which the student will be expected to demonstrate achievement of a given objective (e.g. time limits, materials or equipment to be used, or special instructions).
Activities should clearly explain to the students how to put their knowledge of content to use.	Write activities in careful sequence to correspond with the content.
The activity should be presented understandably.	Write activities in careful sequence to correspond with the content. Use terms such as put, make (a plan), do. Explain activities in short, easy to follow steps given in list form rather than paragraph form. Specify time limits and equipment to be used. Consider graphics or drawings.
The activities should be student-oriented learning activities.	Choose and write activities that will enable the students to work individually or in groups rather than in teacher-controlled activities.
The activities should be clear to students.	Write the activities in simple sentences using precise instructions and specifying time limits and equipment to be used. State if the student is to be performing the activity in a group, individually or with the instructor.

ILLUSTRATIONS

The illustrations should be appropriately placed in relation to textual materials.	Closely align the illustrations with the text they are to clarify. Break up paragraphs if necessary.
The illustrations should be visually attractive.	Use attractive colors, clean lines, few shadows, if any, labeling in the target language and in English. Do not allow words and drawings to obscure or interfere with each other.
The illustrations should be uncluttered.	Provide drawings focusing on what is to be learned. If necessary, draw more than one illustration showing different phases of operations or tasks, with proper and restrained use of hatching or shading, so that illustrations are not loaded with information.
The illustrations should be colorful.	Avoid culturally defined "taboo" colors when labeling illustrations in two languages. Those languages could also be color coded. Color coding could also be used to distinguish the given parts of an illustration being discussed.
Illustrations should have multi-racial representation.	Include persons from different races in illustrations. If you wish to represent black persons, be careful not to simply darken the faces of drawings of light-skinned persons.
The illustrations should include both female and male figures at all occupations.	Provide illustrations (drawings, photographs) to show male and female figures at all occupations. Ensure that women are represented in what have often been regarded as male tasks and vice-versa.

CONTENT

Concepts should be presented in a simple manner.	Avoid unclear wording, difficult vocabulary and complex grammar. Write clear information using a limited vocabulary and simple (1-clause) sentences.
Complex concepts should be broken down into a number of simple concepts.	Allocate one paragraph, at least, to each concept, avoiding paragraphs overloaded with information.
Content should depend heavily on written text.	Identify principal concepts and express them by means of written text with a minimum of diagrams and illustrations.
Content should depend heavily on illustrations.	Identify principal concepts and present them whenever possible by means of diagrams or illustrations with a minimum of written text.
Content should contain balanced proportions of written text and illustrations.	Identify principal concepts and present them by means of illustrations that support and complement each other.

ORGANIZATION

The units of curriculum should be presented in logical succession.	Establish a general plan of progression for the subject that you are presenting. Available materials can usually be of help in this respect. Insert curriculum units and modules in appropriate order.
The emphasis of the materials should be on theory.	Identify principal concepts of each unit. Present information with an emphasis on the theoretical aspects of each concept. Keep practical information to a minimum.
The emphasis of the material should be on practice.	Identify principal concepts of each unit. Present information with an emphasis on the practical aspects of each concept. Keep theoretical information to a minimum.
The materials should present a combination of theory and practice.	Identify principal concepts. Present both practical and theoretical information that is compatible and directly related to the concepts
Masterials should provide for teacher-led learning activities.	Identify the specified learning activities. Provide guidelines so that activities can be conducted as lectures, demonstrations, questions, etc., on the part of the teacher.
Materials should provide for student learning activities in groups.	Identify the specified learning activities. Provide directions so that they can be conducted in the form of group experiments, etc., on the part of the students.
Materials should provide for individual student learning activities.	Identify the speciifed learning activities. Provide directions so that the learning acitivities can be conducted as individual experiments, etc., on the part of the students.

The cultural profile has provided you with information on students' national, social, linguistic and scholastic backgrounds. Such information is very necessary in situations where students and teacher are from different cultures, and could even be useful when students and teachers are of the same language background. Not all of that information, however, is directly applicable to the design of curriculum; the parts that are most relevant to the design of curriculum are those that concern the styles of learning activities that the students may have been accustomed. The curriculum must be adapted to the students' learning style, so that there is no unnecessary obstacle to the learning process. Such adaptation, however, should not preclude the gradual introduction of material suited to North American classroom procedures, so as to ease the students' way toward learning in English.

The application of cultural factors to the curriculum design is an open-ended procedure that depends entirely on local factors revealed by the cultural profile. The most likely factors, however, and the procedures to take them into account are listed below.

You should note that, depending on the requirementsindicated by the cultural profile, you may find recommended procedures that are mutually contradictory. In such a case it will be necessary to make compromises which may not be totally satisfactory. Such compromises, however, are typical of situations in which different languages and cultures come together.

IF THE CULTURAL PROFILE SHOWS THAT:	YOU SHOULD
OBJECTIVES:	
The students are unaccustomed to behavioral objectives.	Write the initial lessons in a teacher-led, lecture form with some memorizing exercises; then gradually introduce behavioral objectives. This can be done by writing lessons that include the use of activities on how to deal with or react to behavioral objectives and their related activities.
The students are accustomed to rote learning.	
ACTIVITIES	
The students come from a culture that places emphasis on teacher-led activities.	At first, emphasize activities in which the teacher gives information by lectures of demonstration.
	Gradually introduce activities in which there is more opportunity for direct student involvement.
The students come from schools where they were not permitted to touch the equipment.	Provide activities that allow the students to get used to handling equipment, starting with simpler and less expensive items.
The students are unaccustomed to being allowed to make mistakes and admit it by questioning the teacher. The students have not been encouraged to ask questions or volounteer information.	Provide activities that allow the same information to be given repeatedly, from different approaches. Gradually introduce activities in which students have to request information.
The students consider that group activity is for "play	Provide activities for one or two students only. Gradually introduce activities involving larger numbers.
The students prefer to organize themselves spatially (circles, around tables, in rows) differently from U.S. students.	Provide individual activities in which students have to move around the classroom or shop before returning to their favored locations. Progress to activities involving two and then more students.

The students are unaccustomed to being asked to perform. The students are unaccustomed to speaking out in public.	Start with emphasis on individual activities and consultation with the instructor. Progress gradually to activities involving demonstration to other students and comments on other students' performance.
CONTENT	
The students are from technically naive backgrounds.	Write initial lessons that include mainly exploratory hands-on activities such as use of tools and their names; drawing of the insides of certain machines; tinker toy building of equipment that is visible in the classroom. In other words, lessons on "What Makes This Work." Take care when making references and analogies that examples are clear to the students.
The students have stereotyped ideas about who should do what work.	Include information that points out to both males and females the advantages of acquiring training for the labor market and practical skills for daily living. Also show that the idea that tools and power-driven machines are too dangerous for females is unfounded.
ILLUSTRATIONS	
The students are unaccustomed to using diagrams.	Provide an activity early in the course which will explain the nature and use of diagrams and the making of diagrams by the students.
The students' culture considers some colors "taboo."	Ascertain which colors are taboo and avoid those colors in the production of the curriculum materials.
The students are unaccustomed to seeing girls in male-type work clothes. The students are unaccustomed to seeing girls working with boys.	If possible, include without comment, illustrations that show females in work clothes involving non-typical occupations.

3. ESTABLISHING THE CURRICULUM DESIGN. When you have identified the curriculum-writing procedures appropriate to your curriculum design specifications and cultural profile, those procedures will constitute your curriculum design.

SUMMARY OF STEPS IN THE ESTABLISHMENT OF CURRICULUM DESIGN-

Assemble curriculum design data.
a) curriculum design specifications
b) cultural profile

Identify appropriate procedures.

Collate procedures to form curriculum design.

SUMMARY OF STEPS IN THE PREPARATION OF THE TRIAL MODULES.

Identify modules for trial development.

Derive instructional objectives.

Identify information in the data bank of resources.

Write trial modules according to curriculum design procedures.

PHASE VII-
CRITICAL REVIEW OF TRIAL MODULES

Curriculum
Staff

Assign copies of
trial modules for
critical review.

Curriculum Staff | Advisory Committee | Teachers

Assemble
fedback

Modify trial modules
and
curriculum design.

THE CURRICULUM STAFF must subject the trial modules to a critical review. The purpose of the critical review is to evaluate the curriculum design as embodied in the trial modules. The evaluation should be conducted by the CURRICULUM STAFF, with help from the *Advisory Committee* and the teachers who are to use the curriculum materials. The evaluation should take the form of an analytical comparison of the trial modules with the desired specifications and the cultural profile.

The result of the critical review will be either rejection of the trial modules (unlikely) or recommendations for modifications of the trial modules in some respect. Such modifications will also apply to the curriculum design, and the revised curriculum design and the modified trial modules will serve as a guide for writing the remainder of the curriculum.

Steps in the procedure for conducting a critical review are noted below.

1-*Assigning copies of the trial modules for review.* Copies of the trial modules should be reproduced and distributed to:

a) the curriculum staff

b) the advisory committee

c) teachers who are to make use of the completed materials.

2-*The critical review process.* The critical review has to consider the trial modules from the point of view of whether the materials convey the required informatikon and whether they convey that information in a way that conforms to the requirements of the curriculum design specifications and the cultural profile. Reactions to the materials should take

the form of recommendations for specified changes in the trial modules.

3-*Assembling the feedback*. The recommendations for changes received from CURRICULUM STAFF, the *Advisory Committee*, and the teachers should be assembled and examined to see if they reveal any deficiencies in the materials.

4-*Modification of the trial modules and of the curriculum design*. After assembling and examining the critical review feedback, you must use the information you acquire to do the following:

a) make the recommended changes in the trial modules

b) modify the curriculum design procedures if any general or repeated deficiency seems to indicate that a change in the curriculum design is needed.

SUMMARY OF THE PROCEDURES FOR CRITICAL REVIEW OF THE TRIAL MODULES.

Assign review copies of the trial modules.

Conduct critical review.

Assemble feedback data.

Identify repeated deficiencies.

Modify trial modules.

Modify curriculum design.

PHASE VIII–
COMPLETE THE CURRICULUM PRODUCT

Curriculum staff

Establish instructional objectives

Identify information in the data bank of resources

Write remainder of curriculum according to revised curriculum design

The revised curriculum design enables you to proceed to writing the remainder of the curriculum. The steps involved are listed below.

1-*Establishing instructional objectives.* The sections of the curriculum plan not dealt with in trial modules must be examined to identify the concepts and skills they deal with. This will allow you to establish corresponding instructional objectives.

2-*Identification of information.* The instructional objectives will enable you to identify the corresponding information in the data bank of resources.

3-*Writing the curriculum.* The writing of the curriculum involves the application of the procedures identified in the revised curriculum design to offer required information in the desired form.

SUMMARY OF STEPS IN COMPLETING THE CURRICULUM PRODUCT.

Establish instructional objectives.

Identify corresponding information in the data bank of resources.

Write curriculum according to the revised curriculum design.

PHASE IX- REALITY TEST PRODUCT

	Curriculum Staff	
		Teachers
		Students
Product	Reality testing	Test Scores
		Paraprofessionals

The term *reality testing* is used here instead of the more usual *field testing,* because field testing bears the connotation of some kind of fine tuning of materials before they are used in the context they are meant for. It is assumed, however, that users of this Handbook may not have the facilities, opportunities or desire to operate on such a scale and that they in effect will be testing their materials by actually putting them to use for a semester or a year, a process referred to here as reality testing.

During the reality testing period it will probably become apparent that some changes are necessary in the materials. Information about necessary changes can be obtained from:

a) teachers

b) students

c) paraprofessionals

d) test scores

It is most likely that the desired changes will be in the culturally related aspects of the materials, especially language and learning styles, including activities. If the materials have been developed and written with care, it should be necessary to make only changes of emphasis. The steps in the procedure for reality testing are listed below.

1-*Classroom use of materials*. The use of the materials for actual teaching in the classroom is the heart of the reality testing procedure. Using the materials for a semester or a year will bring to light any shortcomings that may not have become evident during the development process.

2-*Collecting feedback*. Reactions to the materials will be provided by test scores, which can indicate the need for necessary improvements, and formal or imformal comments from teachers, students and para-professionals. Such comments should be noted and analyzed.

3-*Modification of the materials*. Analysis of test scores and users' comments will provide indications of changes that it may be necessary to make in the materials.

It may be the general opinion of the CURRICULUM STAFF that the recommended changes are of sufficiently minor importance that it is possible to live with the materials as they are and compensate by making changes in teaching procedures.

If, on the other hand, it is decided that changes have to be made, they can be done toward the end of the reality testing period, so that the fine-tuned materials are ready for the next year or semester.

SUMMARY OF STEPS IN REALITY TESTING.

Classroom use.

Assemble feedback.

Analyze feedback.

Make decisions on modification.

Modify curriculum.

BEHAVIORAL OBJECTIVES TERMS: LEVELS OF DIFFICULTY I-V

I. Recall

identify	locate	write	designate	observe
name	define	tabulate	show	note
mention	observe	place	select	inform
describe	annotate	list	imitate	detail
examine	draw	indicate	repeat	compile

II. Application

demonstrate	apply	draw	write	construct
investigate	tabulate	make	place	select
solve	study	separate	abbreviate	compile
make (a plan)	formulate	design	reform	modify
adapt	create	inform	conduct	

III. Analysis

translate	select	compare	design	create
investigate	differentiate	separate	reform	prove
organize	compute	extract	modify	suggest
analyze	calculate	shorten	adapt	conduct
classify	solve	make (a plan)	predict	criticize
specify	study	formulate	experiment	

IV. Synthesis

write	investigate	organize	compute	calculate
solve	study	compare	summarize	suggest
design	modify	adapt	predict	conduct
establish	experiment	create	prove	criticize

V. Evaluation

write	classify	compute	summarize	formulate
appraise	experiment	create	prove	criticize

READABILITY: LANGUAGE AND STYLE

Introduction

The content, objectives and overall organization of your materials are dictated largely by the subject matter. It is the developer's responsibility, however, to put the materials in readable and understandable form. If your materials are not readable and understandable, they will not fulfill the intended function, however well conceived they are in other respects

It was pointed out in the Introduction to this Handbook that English-language versions of bilingual vocational materials are not intended to be directly related to the limited-English-speaking ability students' needs in learning English as a Second Language; they are to convey required subject information as simply as possible while still reinforcing English-language learning by constant repetition of basic sentence forms and limited basic vocabulary. Apart from that, the only English-teaching concern in vocational courses for limited English-speaking students is to ensure that students are fully proficient in job-specific English, that is, the appropriate terminology that, used in a framework of basic English structures and vocabulary, will enable them to function in their chosen skill in an English-speaking setting.

This Module assumes no more than an elementary knowledge of grammatical terms on the part of the user. The procedures recommended here are intended to produce a basic, no-frills style that may strike some readers as "simple minded." However, limitations of the intended users of your materials

should be borne in mind; your aim should be not elegant prose, but simple and clear prose.

It is not, however, always as easy to do that as it sounds. Examples of unnecessarily high flown or pretentious English are so frequent in what we hear or read, especially perhaps in educational or scientific materials, that it is hard to avoid being unknowingly influenced by them. The result of such influence is the constant temptation to use familiar, ready-made language that sounds good but may not say what has to be said in a prercise or simple way. In extreme cases, such ready-made language may not say much at all.

An example of this kind of language is the phrase "proceed with the disassembly process," taken from an otherwise well written textbook. It is a phrase that comes very easily to mind and is very easy to write because we have all read or heard that kind of phraseology many times. However, to "proceed with a process" is almost like saying the same thing twice; in fact, "process" adds nothing to the meaning of the phrase. In any case, the words used are not concrete terms and they are not words of everyday use by limited-English-speaking ability students or even by many English-speaking students. A better way of expressing the thought "proceed with the disassembly process" would be "start to take it apart." This says more specifically and concretely what has to be done, and says it in a way more clearly understood by the reader.

This Module contains some guidelines to writing such simple, clear English.

Factors Affecting Readability

Readability is a measure of how easily written materials can be read and understood, and it is expressed numerically in terms that relate to students' grade levels. Early formulas for arriving at such a numerical measure were complicated and difficult to use. They have been superseded by procedures, such as the Flesch formula, in which sentences, words and syllables are counted in sample passages of reading material, thus giving the average sentence length in words and syllables. These figures are then correlated to produce a grade level readability figure. The assumption is that shorter words and shorter sentences are easier to read and will correspond to the reading abilities of lower grades, and vice versa.

Such procedures, however, suffer from the corresponding drawback, that of assessing only the more easily measurable characteristics of reading materials, namely, word and sentence length, and of ignoring characteristics of reading materials that are not so easily measurable. Those characteristics include organization of material and syntactical structures. Conceptual difficulty, also, can affect readability, but it is assumed for the purposes of this Module that problems of conceptual difficulty will have been filtered out at a prior stage of curriculum development.

In order,then, to produce easily readable curriculum materials you must control (1) readability, in terms of the choice of words and length of sentences, as measured by Flesch, or similar, formula; (2) the logical organization of your materials; and (3) the internal grammatical structure of the written sentences. These topics and some other miscellaneous factors are dealt with in the following sections.

Reading Level

Assessment of reading level by the Flesch formula or similar formula depends on correlating average sentence length and average word length, the general assumption being that the shorter the words and sentences are, the lower the reading level will be. There is, however, a low limit to readability at which very short sentences probably constitute an actual obstacle to readability, because of the resulting fragmentation of information even with very elementary kinds of topics. The nature of vocational education materials imposes a still higher limit to simplification; also the technical terms that have to be used are often not short words, and therefore raise the reading level.

Fortunately, the vocabulary you use in your materials can modify to some extent the limits imposed by subject matter and technical terms. There are large numbers of frequently used, short, (mostly one-syllable) English words that you can use for most descriptive or instructional materials; the use of these words will produce materials of a lower reading level than the use of high-class equivalents. Here are some examples:

DON'T SAY -	SAY -
correct(ly)	right
incorrect(ly)	wrong
insert	put in
remove	take off/out
retain	keep
separate	take out/apart/off

Notice that in the cases of "separate" and "remove," your choice of substitute words can result in greater precision of expression.

The English Glossary that accompanies this Handbook contains words that are useful in this respect. This Glossary was arrived at pragmatically, by trial writing of curriculum materials, and by selection from common English words of those words deemed appropriate for writing vocational materials.

You can use the Glossary in two ways: (1) before you start writing your materials, peruse the Glossary to get a feel for the kinds of words you should use; (2) when you begin to write your materials, make frequent checks to see that the words you are using are recommended; if they are not, you may wish to replace them with words in this Glossary. If you wish to use words that are not in the Glossary, remember that, to keep the reading level down, words must be short and frequently used in English.

The trial curricula that were written concurrently with this Handbook have an average reading level on the Flesch scale of Grades 6.8–7.0. It appears that the reading level of vocational materials probably cannot be much lower than that. As a rule of thumb, to keep this reading level, you should not let the sentences you write exceed 17 words and 21 syllables. Technical terms have to be included in this calculation, so that nearly all non-technical words should be of one syllable only.

Logical Organization

The overall scheme of organization of your materials has already been considered in the section of this

Handbook that gives general instructions for materials development. In the context of language and style, logical organization will almost certainly be connected to the time sequence involved. In other words, you must present your information in the order in which things happen.

This is really very uncomplicated, but be careful not to write such simple-sounding sentences as the following:

(1) Before you take out the rod, unscrew the hexagonal nut.

Write instead:

(2) Unscrew the hexagonal nut before you take out the rod.

Or better still:

(3) Unscrew the hexagonal nut, then take out the rod.

Less obvious is an example such as this:

(4) Disconnect the lever, while holding the strut against the flange.

In this case, you obviously have to start holding the strut against the flange before you can disconnect the lever; so word it:

(5) Holding the strut against the flange, disconnect the lever.

Or better still:

(6) Hold the strut against the flange, then disconnect the lever.

For (3) and (6), see the following section.

Syntactical Structure

Syntactical structure refers in this context to the grammatical structure of individual sentences. Careful attention to that structure can be an important factor in producing understandable materials.

The most frequent basic sentence patterns in English are:

(7) SUBJECT + VERB + DIRECT OBJECT
e.g. The pulley turns the shaft.

(8) SUBJECT + VERB + COMPLEMENT
e.g. The average grit is 180 or 100.

(9) SUBJECT + VERB + INDIRECT OBJECT + DIRECT OBJECT
e.g. The aide must give the patients their medication.

(10) SUBJECT + VERB + ADVERBIAL PREPOSITIONAL PHRASE
e.g. The lever is located at the side of the casing.

(11) (You +) VERB ...(commands)
e.g. Write the figures on the order form.

These patterns are so frequent that there is a normal expectation that the sentence will begin with a sub-

ject (except in (11)), followed immediately by the verb. Any variation on the basic subject + verb pattern for beginning a sentence will disrupt normal expectations and impose an obstacle to understanding.

Most frequent kinds of variations are the following:

(12) INTRODUCTORY CLAUSE OR PHRASE + SUBJECT + VERB

(13) SUBJECT + RELATIVE CLAUSE + VERB

The effect of these variations is to make the reader retain extra information until the expected pattern is completed. An example of pattern (12) is sentence (5), "Holding the strut against the flange, disconnect the lever." The recommended version is preferable because it consists of two regular sentences of pattern (11).

Dependent clauses also require the reader to retain extra information, because by definition they have to be read in conjunction with the main clause of the sentence. It is not, of course, always possible to avoid dependent clauses, notably, for example, "if" clauses; as a general rule, however, you should try to arrange your sentences to avoid dependent clauses, and thus keep the structure simple. For this reason pattern (3) was recommended in preference to pattern (2).

The following is an example of pattern (13) (subject + relative clause + verb):

(14) The spring, which is 6½ inches long, is attached by means of ...

This would be better reworded as follows:

(15) The spring is 6½ inches long, and it is attached by means of ...

As a general rule, then, try to write only sentences of the kind that begin with the subject + verb, and try to avoid dependent clauses.

Density of Information

The earlier point, that of making the reader retain extra information until an expected grammatical pattern is completed, is an example of a concept that might be called density of information. This deals with the number of simultaneous strands or levels of information the reader has to keep in mind to understand what she/he is reading. Your aim when writing materials should be to keep the density of information as low as possible, and you can do this principally by presenting what you have to say in proper sequence in simply structured sentences, as the previous sections have shown. Remember that reducing the density of information does not entail reducing the amount or quality of your information.

The principle of low density of information also applies to some other considerations relating to language and style which cannot conveniently be considered under any single heading.

I - Noun Groups In English it is possible to pile nouns together, each noun being a modifier of the following noun; sometimes these groups are too long to be easily taken in as a unit of information. Such groups should be avoided by being broken into more digestible groups by means of prepositions. For example:

(16) star adjuster assembly spring

This can be reworded:

(17) spring of the star adjuster assembly.

II - Concrete Thought. Abstract or metaphorical expressions, if they are to have precise meaning, require an extra step on the part of the reader to connect them to an actual topic or situation. Always use direct, concrete expressions. Don't say, for example, "level of achievement"; speak instead about "how much a person can do." Concrete expressions will usually be more precise.

III - Pronouns. Pronouns can cause difficulty for the reader unless it is quite clear what the pronouns refer to. In vocational materials, the pronouns in question will almost certainly be "it" and "they." If there is any possibility of misunderstanding what "it" and "they" refer to, do not hesitate to repeat the appropriate noun for the sake of clarity.

IV - Exactness of Meaning. Exactness of meaning is very important in materials that deal with descriptions of processes and instructions for doing things. Be precise and do not compel the reader to provide information to make what you say complete. She/he may supply the wrong information. Be specially careful with words like "forwards," and "backwards," whose meanings are defined by context. For example, "forwards" can mean "toward you," "in the direction you are facing," or "toward the front end (e.g. of a car)."

V - Passive Voice. Try to avoid the use of the passive voice because it reverses the normal structure whereby the subject of the sentence is the agent of an active verb. For example:

(18) The valve is held in place by the spring.

Say instead:

(19) The spring holds the valve in place

The normal expectation of subject + active verb can be an obstacle to the understanding of (18).

Careful attention to the general principles outlined here will enable you to produce clear, precise and easily readable curriculum materials.

MODULE FOUR - TRANSLATION

General Considerations

The organization and content of the materials you are translating have been established in the course of the materials development process. The translator, however, is responsible for the language and style of the translation, and unsuitable decisions in this area can negate the usefulness of materials that are well conceived in other respects.

The main thing to remember is that the translation should be easily understandable to persons whose reading ability in their own language may be limited. However,very little work has been done on methods of assessing the readability of materials written in languages other than English. The most frequently used methods of assessing reading levels in English, correlating the number of words and syllables per sentence, rely on the fact that English possesses a large number of words that are both short and of frequent occurrence, the probability in English therefore being that short, easy-to-read words are also familiar words. 'in other languages, at least those languages of European origin, factors of linguistic development have not operated to produce large numbers of short words, and consequently there is no correlation between shortness and familiarity.

In practical terms, therefore, to achieve the lowest possible readability level, you will have to rely on other factors that affect readability but are not so easily assessed in a quantifiable way. These factors are (1)organization, (2)structure and (3)vocabulary.

(1) Organization. Because you are translating materials that have been carefully organized so

as to be logical and understandable at all levels, you must be careful not to disrupt the organization at the level of the sentence and paragraph. Take care to maintain the organization of topics into easily understandable sections; don't vary the order of clauses in individual sentences, because that may disrupt the time sequence of what is being described.

(2) Structure. Write as much as possible in independent clauses, with a minimum of dependent structures. Try to keep subjects and verbs together at the beginning of sentences. In translating into languages of European origin, the English original will be a good guide.

(3) Vocabulary. The English language Glossary attached to this Handbook consists of fewer than 700 words which are considered of general use for writing vocational materials. Other languages, particularly inflected languages, will probably need more words to render the same range of meanings, since English words can often function as more than one part of speech.

French, Spanish and Chinese versions of the Glossary are also contained in the Handbook. You can use them as a guide when translating materials. The basic principle to remember in choice of words is that whenever possible you should use words that are of frequent occurrence, and hence more familiar, in preference to less common words.

This consideration is relevant to the decision as to whether you should use vernacular terms as opposed to standard, "correct" terms. If you use only standard words you will probably lessen the effectiveness of the materials as educational instruments, because such words may not be familiar to students. If you use only vernacular terms you will offend what may be the very strong purist instincts of educated speakers. It seems, therefore, that the practical way out is to include the standard term with the vernacular equivalents used by your students as explanations in parentheses.

Steps in the Process

It is assumed that the materials to be translated have been developed according to the criteria stated in Modules 2 and 3. The developer may or may not have been a bilingual/bicultural person. The developer was, however, a person familiar with the subject matter in the instructional materials. The translator will be a bilingual/bicultural person who may or may not be familiar with the subject matter of the instructional materials. The following steps should therefore be followed in order to assure ease and accuracy of translation:

Prior to beginning translation--

- Acquire training manuals from a country where the target language is spoken.

- Read materials through for understandability on the part of the translator.

- Go over the text with the person who developed the materials.

- Determine the reading level of the English text. (Use the Flesch Readability Scale, for example. You will find a brief description of the Flesch

Readability Scale in Appendix A. For full details see Module 5 of Volume 1 of this Handbook.)

- Analyze the text in terms of ideas, not as isolated vocabulary.

Translation--

- Translate the list of basic technical words to make a glossary.
- Maintain the reading level of the original materials; reading levels can change through the medium of translation.
- Check translation of technical terms by reverse translation (Target Language to English).
- Vocabulary should be in standard language with parenthetical explanations in the vernacular if necessary.
- Begin glossary as translation progresses; glossary includes: (a) English, (b) Target Language Standard, (c) Vernacular, (d) Most-commonly-used words.
- Translate ideas, not isolated words; but keep the meaning of what is being said.
- Use simple tenses while translating.
- Simplify the phraseology.
- Keep vocabulary consistent.
- Label illustrations of control panels in the target language, but emphasize the fact that they are labeled only in English in the actuality.

Translation of Technical Terms. In practice, equivalents of technical terms may sometimes be hard to find in dictionaries. This is why it is desirable to have access to training manuals and parts lists from a country where the target language is spoken. It is also desirable to be able to consult a local resident who is both a native speaker of the target language and employed in the trade your materials deal with. He/she will be able to act as an informant for at least the local minority language vernacular equivalents of the terms you have to translate.

Another thing to remember in connection with vocabulary is that the technical terms of the skill you are writing about may have to be varied depending upon the country of origin of your students. This happens in English, e.g. American *gasoline* v. British *petrol;* similarly in Spanish *nafta, gasolina* and *esencia,* all meaning gasoline, are used in dif- Spanish-speaking countries.

Reverse Translation. It is useful to make frequent cross checks of your translation by doing a target-language-to-English translation of your version. This is particularly desirable when your dictionaries do not give a clear indication of what word to choose for the context you need it for. (See below)

Common Pitfalls to Avoid in Translation

Beware of words that look alike in both languages. Check them out carefully. For example, it can be easy to make the following errors:

realize: realizar (Spanish), to accomplish
réaliser (French), to accomplish

You will note that in English "realize" does not render the same meanings.

figure: figura (Spanish), face
figure (French), face

While in English the word "figure" has several other meanings, but never means "face."

experiment: experimentar (Spanish), to experience
expérimenter (French), to test something (notice the limited meaning)

While the English "to experiment" means: tener una experiencia (Spanish); faire une experience (French).

Beware of simple-sounding words such as "set" which can have a multitude of meanings in English such as: put, place, get hard, adjust.

Bearing the context in mind, look up the word 'set' in the dictionary. Choose the word you feel renders the closest equivalent. Then verify the meaning of the equivalent you have chosen by looking it up from the target language to English (reverse translation).

Make sure you are trying to translate a word or phrase that makes sense in English to start with.

Be sure to choose the accurate translation of a given term in relationship to context because one term may have several meanings in another language. For example "gear" has three meanings in Spanish: engranaje, velocidad, and rueda dentada. In French it has two meanings: changement de vitesse, and engrenage.

If you are not sure you have chosen the correct term, translate it in reverse by looking up the word you have chosen to see if it renders the word you began with.

"ONE ENGLISH TERM
MAY HAVE SEVERAL MEANINGS
IN ANOTHER LANGUAGE"

Another way to verify a translation is to look up the term in a target language monolingual dictionary.

If you look up the word "plane" (as in woodworking) in *Simon and Schuster's International Dictionary, English/Spanish, Spanish/English,* you will find two meanings:

plane: cepillo (de carpintero)
garlopa

When reversing the translation you will find that "cepillo" means (1) brush, (2) carpenter's plane, and "garlopa" means large plane (for smoothing wood already planed). Depending on the context, you have found the precise term through the medium of reverse translation.

These are some cautionary statements on the task of translation. They only serve to warn you that translation is not so easily accomplished.

There is a bibliography of dictionaries at the end of this Module that should help you begin to assemble a set of references.

Assessment of Translation

It is assumed that a careful assessment of the translation is required because a number of inadvertent alterations can occur in the technical quality and readability of the text through the medium of translation. The technical accuracy may change and reading levels may be either raised or lowered. The translation should therefore be checked by a person who is fluent in the target language and familiar with the technical content as well. The evaluator of the translated text should consider the following:

Content--

- Is the translation written in standard language with parenthetical explanations in the vernacular?
- Is the measuring system familiar to the students?
- Is the technical material translated accurately?
- Are the personal pronouns written male/female to avoid sex stereotyping?
- Does the translation render the same reading level as the original text?

Organization--

- Does the translation faithfully present the original text?
- Is one concept at a time presented?
- Are the ideas presented in a specific and understandable manner?

Format--

- Is the format clear and legible?
- Do the format and layout match the original text?

- Language

- Is the vernacular language used?
- Is the technical vocabulary currently in use in the student's country of origin?
- Is the language clear and precise?
- Are verb tenses consistent?
- Are sentences short and simple?
- Is a glossary containing English, standard and vernacular vocabularies included?
- Is the reading level that of the target student population?
- Are analogies used familiar to students?
- Does the text retain consistent use of vocabulary?
- Is the text written in standard language with parenthetical explanations in the vernacular?
- Does the text contain consistent use of pedagogical terms (behavioral vocabulary)?

Illustrations--

- Are illustrations clear and legible when labeled in two languages?
- Do the illustrations show multi-racial groupings?
- Are the illustrations written in English and the target language?
- Do the illustrations include male and female figures at other than traditional roles?
- When control panels are in English, do they remain in English in the translation?
- Do the illustrations show the teacher in a leadership role with the students standing at a "proper" distance?

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Progress Assessment

Since this Handbook deals with the procedures for the development of curriculum for persons of limited-English-speaking ability, testing will be discussed within that scope. Testing in this context will mean (1) those tests that you, as the curriculum writer, include in each lesson and module to assess the progress the student is making and (2) those tests you include at the end of each course or set of modules for use as final or cumulative evaluation.

Educators are becoming more and more aware of the fact that linguistic and cultural factors can influence a person's ability to pass a test. In vocational education, those factors are coupled with an expected level of competency in a skill area. This makes it doubly difficult for a person of limited-English-speaking ability to do well on standardized tests. It is important therefore, that a curriculum writer construct tests that are culturally and linguistically fair and are written in basic English or the students' language. Be careful to write and to administer the test in the language in which the students learned the subject or skill.

Testing or assessment can be another instance in which a person of limited-English-speaking ability meets defeat. But it need not be. Standardized tests for the most part are culture bound; they reflect the values, customs, and attitudes of one part of society, making it very difficult for those from other cultures to do well on them. It is almost impossible to construct a culturally and linguistically fair test.

Information about culture must be a part of writing tests. In order for any aspect of education, including testing, to be bicultural, two principles must be borne in mind: (1) teachers and administrators should expand their existing knowledge and techniques to include and accomodate the students' native culture and language; (2) important aspects of the second culture (in this case, the Anglo culture) should be taught to facilitate positive biculturalism.

Part of teaching a culture is the teaching of how to take tests in that culture. An ideal way to familiarize students with test taking is to include elements of tests that are unfamiliar to the students of a given culture in the lesson's activities. There should be practice with true-false questions, multiple-choice questions and practice in working under time constraints.

There are no simple solutions to meet the needs of testing in vocational education for students of limitedEnglish-speaking ability. However, there asre several things that you, as a curriculum writer, can do to make tests more fair. This does not mean to suggest that the test should be technically down-graded, but rather that there are several alternative ways to demonstrate knowledge that could be used by a person of limited-English-speaking ability. The following examples show how tests can be written to be linguistically fair.

INSTEAD OF

EVALUATION INSTRUMENT

Equipment and materials: Repair order forms and automobiles

References: Automotive repair and parts manuals

Time limit: 30 minutes

INSTRUCTIONS

The evaluator will select any two repair tasks from those listed and will requre that you complete a repair order for each task. The repair order forms will be those you are currently using. Fill in the form completely. Use the evaluator's name for the space on the form requesting the owner's name. The evaluator will select two automobiles from which to obtain the information concerning serial numbers, license number, etc. You must include on each of the repair orders the list of repairs to be made, the approximate parts cost, the labor time, and the labor cost at the dollar-per-hour rate designated by the instructor.

Repair Tasks

1. Replace the fuel pump on a Ford product not more than three years old and having an eight-cylinder engine, air-conditioning, power steering, and automatic transmission.

2. Replace the alternator and regulator in a Chrysler product not more than three years old and having an eight-cylinder engine, air conditioning, power steering, power brakes, and automatic transmission.

3. Replace the water pump, radiator, and radiator hoses in an American Motors product not more

than three years old and having an eight-cylinder engine, power steering, and automatic transmission.

4. Replace the carburetor (single-barrel) in a General Motors product not more than three years old and having a six-cylinder engine, power steering, and a standard transmission.

5. Replace the distributor points and condensor and coil in a General Motors product not more than three years old and having an eight-cylinder engine, two-barrel carburetor, automatic transmission, power steering and air conditioning.

DO THIS

ASSESSMENT

This part must be finished in 30 minutes.

1. Your instructor will give you two blank repair order forms.

2. Your instructor will write on the blackboard a list of different repair jobs from the common replacement category.

3. You must fill out a repair order form for each job.

4. You must include the following information on the repair order forms:

a) A list of repairs to be made.

b) Write down roughly what the parts will cost.

c) Write down the amount of time needed for the repair job (labor time).

d) Write down the cost of the repair job (labor cost). Write down how much an hour the job will cost. Your instructor will tell you the labor cost.

e) You may use any automotive repair or specifications manual.

f) Try to fill out the repair order forms carefully.

THESE WERE THE CHANGES THAT WERE MADE IN THE TEXT:

You will note that a number of things have been changed while the information being elicited remains the same. Those changes are:

1. Careful attention was paid to keeping the language simple.

2. More white space was included to make the print visually easier to sort out.

3. The paragraph was broken down into numbered steps.

4. The reading level was kept lower.

5. The repair tasks were included in teacher-directed activities.

This type of test construction can be applied in English or the students' language, but be careful to write and administer the test in the language in which the students learned the subject or skill.

When you are tempted to write an assessment instrument that requires a written response, avoid it when you can use these terms instead:

- Tell your instructor
- Show your instructor
- Show a group of fellow students
- Compare your work with
- Tell a group of fellow students
- Draw
- Do this and your instructor will tell you if you have done it right.
- Explain

If you feel that the student must be asked to write, the student should have practice in writing out any new vocabulary during the lesson itself. In this way you are not asking the student to write words that he/she has not ever written before in English. Remember that you are asking a student to pass a skill test in a foreign language, namely English.

Be sure to test in the language a given skill has been taught in.

For instance, if you are testing for the same previously mentioned information in Spanish, your assessment would look like this:

EVALUACION

Esta parte se debe terminar en 30 minutos.

1. Tu maestro te dará dos formularios de reparaciones en blanco.
2. Tu maestro escribirá en la pizarra una lista de la diferentes trabajos de reparación de la catagoria de reemplazamientos comunes.
3. Tu debes llenar un formulario de reparación para cada uno de los trabajos de reparación que vas a hacer.
4. Debes incluir la siguients información en los formularios de reparaciones:

a) Una lista de las reparaciónes que vas a hacer

b) Una lista aproximada de gastos por pieza

c) Cálculo escrito del tiempo que requiere el trabajo de reparación que vas a hacer (tiempo de labor.)

d) El costo del trabajo de reparación (mano de obra). Anota el costo por hora. Tu maestro tu dirá el costo por mano de obra.

e) Para hacer esto, puedes usar cualquier manual de reparación de automoviles o un manual de especificaciones.

f) Llena los formularios de reparaciones con cuidado.

If you are testing for the same previously mentioned information in French, your assessment would look like this:

Evaluation:

Tu dois faire cette partie de la leçon en 30 minutes.

1. Ton professeur vous donnera deux formules de réparation a remplir.

2. Ton professeur ecrira une liste de réparations sur la tableau noir. Ces réparations seront de la catégorie de remplacements communs.

3. Tu dois remplir une formule de réparations pour chacun des travaux nécessaires que tu vas accomplir.

4. N'oublie pas de mettre les renseignements suivants sur la formule de réparations:

   a) Une liste des réparations que tu vas faire.
   b) Une approximation du prix des pièces.
   c) Ecris combien de temps il faudra pour faire chaque réparation.

   d) Ecris aussi sur la liste le prix du labeur de chaque réparation. Ecris combien par heure de chaque réparation. Ton professeur vous le prix du labeur de chaque réparation.

   e) Pour t'aider tu peux utiliser les manuels de spécifications ou de réparations qui se trouvent dans la salle de classe ou l'atelier.

   f) Essaie à faire la liste avec soins.

Or, if the same topic were taught in Chinese, your assessment instrument would look like this.

工價

此項作業必須在卅分鐘內完成之。

1. 你的老師將給你兩張空白的修理命令單。
2. 你的老師將從普通另件代用分類手冊中列出不同的修理工作在黑板上。
3. 你必須填寫每項修理工作的命令單。
4. 你必須在修理命令單內列出下列各項的資料：
   A、一連串所要修理的項目
   B、寫出要修理的項目
   C、寫出所需修理工作的時間（工時）
   D、寫出所修理工作的價格（工價），寫出每小時工作的價格，你的老師將要告訴你工價。
   E、你可使用另何汽車修理或規格手冊
   F、小心試填修理命令單

It is not easy, nor clear-cut, to make a test culturally fair. Culture affects many aspects, among them learning styles and consequently modes of testing. Students from many cultures are accustomed to lecture-type teaching styles with relatively little hands-on types of experiences. The testing is often done in an essay-type mode. Students of limited-English-speaking ability are therefore often unaccustomed to the types of testing used most frequently in U. S. schools, namely: multiple choice, true-false, and time constraints. Essay-type questions are not suitable for students of limited-English-speaking ability because, if tested in English, they are unable to write English well; and, if tested in their own language, they may not be able to write that well either.

It is obvious that at some point students from other cultures will have to become accustomed to taking tests in the mode of the predominant culture. Practice in taking multiple-choice and/or true-false questions can be incorporated on a non-grading basis within a lesson and then ultimately included as a testing mode once the students are accustomed to that way of testing.

Since it is impossible to write culture-free tests, test results should be regarded with care. What the instructor must remember is that a student of limited-English-speaking ability may not do well on a test because: (1) he/she does not know the language of the test well; (2) he/she is insufficiently familiar with the mode of testing; (3) he/she is intimidated by the tester because of the difference in language, culture and/or ethnicity of the tester; (4) there are gaps in knowledge caused by changes of schools, or countries. It is admittedly difficult to determine which one of these factors, apart from the actual knowledge of the skill being tested, is affecting the student's ability to do well. It does often help for the instructor to go over the test with the student while keeping those factors in mind.

CUMULATIVE TESTING

In order to complete a course, students in bilingual vocational education will have to be tested for their knowledge of "job English," that is, the English that is used to work in, or describe, that particular skill. In order to make testing as fair as possible, the following order of testing should be observed:

1. Testing of a skill - actually doing and discussing in the language of the students' choice.

2. Testing of a skill - actually doing and discussing in English.

3. Written test of the skill in the language of the students' choice.

4. Written test of the skill in "job English."

If, however, the students have learned a skill in one language, they should be tested in *that language only* since they will not be familiar with the vocabulary in the other language.

Validity and readability of tests are culture specific. A test may fairly assess students from one culture, but not those of another culture. Several things to consider are:

1. What kinds of learning is the student accustomed to (e.g. rote, inductive)?

2. How do teaching and learning take place at home (e.g. direct verbal instruction, stories or proverbs, modeling and imitation)?

3. Is it appropriate for students to ask questions or volunteer information?

4. Are the students more comfortable demonstrating their knowledge through performance or writing?

5. Are the students more comfortable when demonstrating their knowledge in a group or individually?

When writing tests for cumulative or final evaluation, remember that you are testing both English-language progress and skills. Standardized tests are inadequate because they rely on English language ability and knowledge of the dominant culture. However, they are useful in helping you to determine how to test a skill; then you have to add the cultural and linguistic considerations while maintaining the proper academic level.

HOW TO WRITE FAIR TESTS

Remember to test students only on skills they have been taught to do. "Skills" in this context has several meanings:

Language;

Be sure to write in simple English using the technical vocabulary the students have learned to say, write, and read. Do not add extra vocabulary.

Test Modes:

Be sure to use only those test modes the students have become familiar with during the course. They should have been given practice in how to take True-False Tests, Multiple-Choice Tests, and tests with time constraints.

ORIGINAL - Certified Engine Repair Mechanic

I. SAMPLE EXAM FOR PRACTICE 120 minutes

DIRECTIONS: For each question in this test, read carefully the stem and the four letered choices that follow. Choose the answer which you consider to be correct or most nearly correct. Mark the answer sheet for the letter you have chosen: A, B, C, or D.

1. If the intake manifold of a gasoline engine is warped to the extent that it leaks, the engine will most likely

   (A) have a rough idle
   (B) miss on one cylinder
   (C) perform better at high speeds than at idle
   (D) check out with a vacuum gauge as running on a rich mixture

Job Skills:

Be sure to test only those skills the students have been taught in class or in shop sessions.

The following examples will show you how to revise current standardized tests for use as assessment instruments for students with limited-English-speaking ability. The sample questions were taken from *Automobile Mechanic Certification Tests* and were revised for use in classes where the students may have problems with English.

REVISED TEST QUESTIONS

1. The intake manifold of a gasoline engine is warped and it leaks. Which of the following conditions will result from this type of problem?

   (A) The engine will have a rough idle.
   (b) The engine will miss on one cylinder.
   (C) The engine will perform better at high speeds than on idle.
   (D) A vacuum gauge will show that the engine is running on a rich mixture.

2. The "cylinder balance test" is normally used to locate all of the following EXCEPT

(A) worn piston rings
(B) defective sparkplugs
C) a leaky exhaust manifold
(D) a valve which does not open properly

3. An engine, while running, has a noticeable wrist pin slap. It is likely that this condition is caused by

(A) worn piston sleeves
(B) worn main bearings
(C) worn end-thrust bearings
(D) excessively advanced ignition timing

4. A mechanic inspecting engine crankshaft main bearings in engines made before 1965 will assume that the

(A) crankshaft and camshaft bearings will show equal wear
(B) crankshaft bearings will be more worn than the camshaft bearings
(C) camshaft bearings will be more worn than the crankshaft bearings
(D) crankshaft bearings may or may not be worn more than the camshaft bearings

2. Which of the following can you NOT do by using the "cylinder balance test"?

(A) find worn piston rings
(B) find sparkplugs that don't work
(C) find an exhaust manifold that is leaking
(D) find a valve which does not open properly

3. A mechanic turns an engine on and hears a wrist pin slap. Which of the following can cause a wrist pin slap?

(A) The piston sleeves are worn.
(B) The main bearings are worn.
(C) The end-thrust bearings are worn.
(D) The ignition timing is too much advanced.

4. A mechanic has to inspect crankshaft main bearings and camshaft bearings in engines that were made before 1965. Which of the following is probably true about crankshaft main bearings and camshaft bearings in engines made before 1965.

(A) The crankshaft and camshaft bearings will show the same wear.
(B) The crankshaft bearings will be more worn than the camshaft bearings.
(C) The camshaft bearings will be more worn than the crankshaft bearings.
(D) The crankshaft bearings may or may not be more worn than the camshaft bearings.

THE CHANGES THAT WERE MADE

You will note that in this example, the English has been simplified without changing the information. It has been simplified by changing word order and, when necessary, by the addition of phrases. In particular, note that the stem of each question is a complete sentence and that usually the four choices are also independent sentences. It is assumed that the students who will take this test will have learned how to take multiple-choice tests during their course of study. Though the modification remained a multiple-choice test, the revisions make it easier to discern what information is being solicited without altering the technical quality of the test.

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glossary

APPENDIX I

A Brief Description of the Flesch Formula

The Flesch formula for determining readability is based on the assumption that short sentences and short words are easier to read and understand than long words and sentences. Short sentences are easier to take in because they do not require the reader to retain a heavy load of information until the end of the sentence; short words are in themselves easier to read and in English they are usually words of frequent use and hence tend to be more easily understood.

The Flesch formula applies these considerations to the assessment of readability; sentences, words and syllables are counted in samples of the reading material that is being assessed. A simple calculation can then indicate the average length of the sentences. The average sentence length and the average number of syllables per sample are then correlated by means of an index table, which gives an index number. The index number is related to the estimated grade level of the materials by a conversion table.

Complete instructions for using the Flesch formula, together with the data sheet and index and conversion tables, can be found in Module 5 of Volume 1 of this Handbook.

APPENDIX II
COGNITIVE STYLES AND CULTURE

INTRODUCTION TO COGNITIVE STYLES

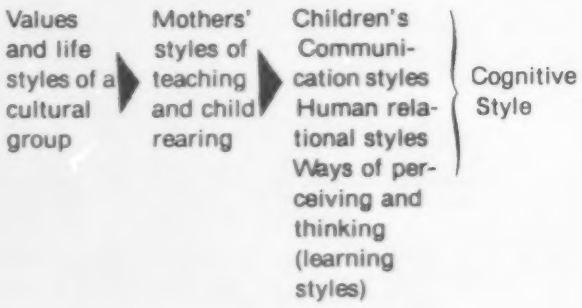
Overview and Introduction

In manual No. 1 ("A New Philosophy of Education") we stressed the importance of creating educational environments that "meshed" with children's home and community socialization experiences. Educational environments which meet this requirement are said to be culturally democratic.

It is important that teachers know something about the socialization practices of different cultural groups. The second manual of this series is intended to provide teachers with information of just this kind. In this manual, we want to consider the influences of socialization practices on children's cognitive styles and, in particular, children's preferred learning styles.

Children's preferred cognitive styles and preferred learning styles are the central issue of this and the following manual. For this reason, it would probably be helpful to give some examples of what we mean by preferred learning style. Consider the case of a teacher who is trying to teach math to two very different students. The first student is not interested in the ususal commercial math curriculum, but the second student works well with the same materials. The second student enjoys competing with other students and trying to beat classmates (and sometimes the teacher) to a correct answer or a novel solution to a math problem. The first student, however, prefers to work in cooperation with other students and the teacher and often uses the teacher as an example or model when working on assignments. In time, the teacher learns that math lessons will be effective with only one of the math students unless special care is taken to modify the lessons. For one child, commercial math materials are altered to include humor and fantasy (as in Sesame Street or the Electric Company television programs). The materials are adapted to group teaching and allow children to cooperate with one another to learn and apply new concepts. The teacher takes care to encourage the children with warm reassurances and to provide clear-cut instructions. The teacher uses another strategy for the other child. The instructional materials tend to be very much centered and contain little or no reference to fantasy or students' personal experiences. The teacher emphasizes the importance of individual effort on the part of students and often encourages competition. Instructions are clear, but the teacher leaves enough unsaid to stimulate the students to discover concepts for themselves.

Whether or not the reader has thought of individualizing math instruction along these lines, every teacher knows that children differ widley from one another in the ways they go about learning. A teaching approach that works well with one student doesn't work nearly as well with another Why is this true? We will try to answer this question in this manual. In particular, we will atempt to trace children's preferred cognitive styles to children's home and community socialization experiences. As suggested in the last manual, the ways in which parents socialize their children follow from values and beliefs that are often culturally unique. These values lead parents to encourage certain human relational styles, commu-


Values and life styles of a cultural group
Mothers' styles of teaching and child rearing
Children's Communication styles Human relational styles Ways of perceiving and thinking (learning styles)
Cognitive Style

The basic idea is that children's backgrounds play a very important role in determining many of the differences that appear so striking to teachers. Of all the differences that concern teachers, differences in learning styles certainly merit careful attention. These differences often appear too complex to be easily understood and used as a basis for individualizing teaching. Yet, as our opening examples suggest, differences in children's learning styles almost always can be broken down into differences in ways children communicate and relate to others, their reasons for achieving, and their ways of perceiving and thinking. What is needed is a way of pulling these differences together, to provide teachers with a practical approach to basing teaching on the unique styles of bilingual, bicultural children. *Cognitive style* provides us with the needed concept. We use this concept to develop a framework for implementing cultural democracy.

Two Kinds of Cognitive Style

The next manual will identify ways of measuring a person's cognitive style. These techniques are used to determine whether a person is primarily *field sensitive* or *field independent*. We have already identified several characteristics of field sensitive persons: they tend to organize their perceptions and experiences in terms of wholes or totalities. They are generally sensitive to the overall *context* (such as a social atmosphere) of objects and events. Their sensitivity to the field or background influences their preception of objecs, persons, and social events. By comparison, field independent persons respond to events and objects independently of the field or context. The selection and organization of information develop from attention to parts, with relatively little attention paid to the total formed by the parts.

Researchers have found many other differences between field sensitive and field independent persons. We have attempted to summarize some of the research findings which have immediate significance for educators. Readers interested in more details of research on cognitive style are referred to the appendix to be found at the conclusion of this manual.

1. Field independent persons perform better than field sensitive persons on tests which involve separating a part from an organized whole or rearranging parts to make a whole.

2. Field independent children tend to be "task centered" in taking tests; field sensitive children tend to glance at the examiner and pay more attention to the social atmosphere of the testing situation.

3. Field sensitive persons appear to be more imaginitive in verbally describing social situations. The social environment seems to be more significant for field sensitive persons in

nication styles (including language), incentive-motivational styles, and learning styles. Children become familiar with these "styles," which are then interwoven into their ways of interpreting the world around them and responding to it. In the remainder of this manual, we will use the concept of "cognitive style' to express this idea. In the following pages, we will explain the meaning of this concept, provide examples, and indicate the usefulness of "cognitive style" for understanding differences in children's preferred learning style.

What is Cognitive Style?

The word *cognition* really means nothing more than thinking or knowing. This term has been typically used to express the idea that people differ from one another in ways they think and process information. The emphasis is on the way of perceiving the environment and organizing information about it. Consider a simple example. A person scans a large wall mural and becomes engrossed with the artist's treatment of small details. The person steps closer and studies the use of forms and colors. Another person inspects the same mural and comments on the effect of the mural as a whole: "Rivera really captured the mood of that period of Mexican history."

Both persons had the opportunity to perceive the many different aspects of the mural. Why did one center his attention on the details while the other responded to the overall impression? This is the kind of question that researchers have tried to answer by studying "cognitive style." As our example suggests, cognitive style is partly concerned with the importance people attach to parts or wholes. Some people have a style of perceiving the world in such a way that the smallest detail almost always stands out. Other people overlook the small details, preferring instead to see the "big picture." This tendency is characteristic of most persons we will later describe as "field sensitive."

Cognitive style also refers to differences in noticing social aspects of the environment. Some people tendas a mater of habit to focus on other people's facial expressions and moods. They are extremely sensitive to nonverbal indications of feelings. Other people ignore these cues in favor of physical features of the environment. Every teacher has noticed how school-age children differ in this respect. Some children prefer a math lesson which gets right down to the facts: "This line is exactly one inch longer than that line." other children are put off by this approach. They may prefer the Sesame Street approach in which the shorter line expresses some feelings about being the shortest part of the triangle. To these children, lines as lines are not meaningful unless they are given human or social attributes.

These examples indicate that cognitive style is revealed by the ways we think and act in many different situations. Not all of these situations involve performance on complex mental problems. The meaning of cognitive style must, then, include more than just sensitivity to wholes or parts. In the remainder of this manual, we will consider cognitive style in its broadest psychological sense, that is, how it relates to differences between persons in human relational, communication, incentive-motivational and learning styles. Cognitive style is a useful concept for summarizing the other styles we've discussed as presented in the chart below.

ways. They tend to rememeber faces and social words better than field independent persons. They are more influenced by expressions of confidence or doubt than are field independent persons.

4. Students and teachers who share a common cognitive style tend to perceive each other more favorably than do students and teachers whose cognitive styles are dissimilar.

5. Field sensitive persons prefer psycotherapists with whom they can establish a personal relationship. Field independent persons, on the other hand, prefer therapists who take a more passive, consultantlike role. Field sensitive and field independent psychotherapists, in turn, tend to prefer the very kinds of client-therapist relationships that field sensitive and field independent persons, respectively, seem to be seeking.

The many differences between field sensitive and field independent persons might lead us to wonder if schools aren't better suited to one cogniive style than the other. In other words, might not the classroom environments, teacher-student relationships, teaching styles, and curriculum of some schools be geared more to field sensitivity or field independence? People who have given serious attention to this question have often concluded that American public schools usually incorporate the field independent communication styles, human relational styles, incentive-motivational styles, and ways of thinking and perceiving (Cohen, 1969; Ramirez and Casteneda, forthcoming). Therefore, the schools that do promote learning within the field sensitive cognitive style.

The almost exclusive field independent orientation of schools could have two undesirable consequences. First, teachers' effectiveness may be limited. This conclusion seems reasonable in light of the common observation that traditional or conventional teaching styles and curriculum work well with only some children. Beyond the question of the teachers' effectiveness is the problem of the schools' discrimination against some racial or ethnic groups. Discrimination of this kind would exist if the schools accommodated themselves almost exclusively to a cognitive style which is common in one segment of society but not in others. To weigh the likelihood of this possible injustice we must know something about the relationship between cognitive style and culture. The subject is discussed at length in the following section.

Cognitive Style and Culture

In this section, we want to consider what is known about cognitive styles of culturally different children. This information will prove valuable later in this series of manuals as we try to gain an understanding of both the unique intellectual strengths and the preferred learning styles of bicultural children.

Researchers have studied cognitive style in many different groups. In one study, Black and Native American children were found to be primarily field sensitive (TenHouten, 1971). Other studies have revealed that Mexican American children are primarily field sensitive while Anglo American children tend to be field independent. We will describe some of these studies in detail. The findings are interesting and, in addition, the

studies provide an example of the ways in which cognitive style is measured.

In one study (Carnavan, 1969), the Man-in-the-Box Test (similar to the Portable Rod and Frame Test discussed in the following manual) was administered to over 1,000 children in several schools in the Riverside (California) School District. The children were selected from kindergarten through sixth grade classrooms. There were nearly equal numbers of Mexican American children (596) and Anglo American children (571). The findings of this study indicated that Mexican American children, regardless of age and school attended, tended to be more field sensitive than Anglo American children (who tended to be field independent).

A second study of cognitive style among Mexican Americans and Anglo Americans was conducted in Houston, Texas, by Manual Ramirez III and Douglas Price-Williams (in press). In this study, 120 fourth graders, 60 Mexican Americans, and 60 Anglo Americans of the same socioeconomic class and religion (catholic) were tested with a Portable Rod and Frame Test. Mexican American children were found to be more sensitive than the Anglo American children. It is interesting to note that test scores of manyAnglo girls were very similar to those of Mexican American boys, emphasizing the often unsuspected diversity which exists in the Anglo group.

Yet another study was conducted with the support of the United States Office of Education, Division of Bilingual Education, in the 1971-1972 school year by the present authors (Ramirez, Casteneda, and Herold). The Portable Rod and Frame Test was used as a measure of cognitive style in children. Cognitive style in the children's mothers was determined by rating their drawings of human figures (Draw-a-Man Test). Cognitive style was related to children's ethnic background and, as well, to the prevalence of traditional Mexican American values in different communities.

We expected to find in our study that cognitive style of Mexican American children and their mothers would be clearly related to the nature of the community in which they lived. Specifically, we expected field sensitivity to be the most typical cognitive style in the community which adhered closely to traditional Mexican American values. Another community, "dualistic" in terms of an apparent mixture of American middle class and traditional Mexican American values, was expected to occupy an intermediate position on the field sensitivity-field independence continuum. Field independence was expected to prevail in the highly urbanized and acultured Mexican American community (a suburb of a large metropolitan center in the Southwest).

The expectations were confirmed. Both the Mexican American mothers and their children (first, fourth, and sixth graders) in the rural, mostly Spanishspeaking community, clearly tended to be field sensitive. In an extensive home interview, these mothers, acknowledged agreement with traditional Mexican American values. These values also appeared to form the basis of their child-rearing practices. The mothers emphasized identification with the family, adherence to Mexican Catholic ideology, teaching respect to children, and the importance of children's being attentive to the needs of others.

The second community differed from the first in a number of important ways. For one, English is the primary language of many Mexican Americans in

this community. Slightly less than one-quarter of the Mexican Americans in this community report being Protestant. The ethnic solidarity of the first community contrasts with frequent intermixing of ethnic groups in the second community. While the majority of residents are Mexican American, a substantial number of Anglo families reside in the community and occupy influential community positions. Not surprisingly, the Mexican American mothers in this "dualistic" community less often supported traditional Mexican American values than did the mothers in the "traditional" community. Many of their child-rearing practices emphasized early separation from the family, achievement for the self, and assimilation into American life. The Draw-a-Person Test identified these mothers as generally more field independent than mothers in the traditional community. Their children, in turn, scored in a more field independent direction on the Portable Rod and Frame Test than did children of the same ages in the traditional Mexican American community.

The third community ("atraditional") differed from both the traditional and dualistic communities. Not only is English the primary language among Mexican Americans in this community, but few of the adults are bilingual. The Mexican American adults work, play, and live side by side with Anglo Americans. Their children attend ethnically-mixed schools. Pressures to adopt mainstream American values and life styles are far more evident in this community than in the dualistic community. Social prestige and recognition (such as political office holding) are afforded persons who appear more mainstream American than Mexican. Although many Mexican Americans in this community still identify themselves as Catholic, Catholicism does not influence their day-to-day living to the degree it does in traditional communities. Many of the Mexican American families in this atraditional community are active members of Protestant churches.

The effect of these acculturation pressures were clearly revealed in the home interviews. The mothers reported being less identified with traditional Mexican American values. They attached relatively little importance to identification with the family and ethnic group. Respect for authority figures and for tradition was not stressed by these mothers. Instead, they favored individual achievement and development of a separate, individually unique identity.

We anticipated that the Mexican American mothers and children in the atraditional community would be field independent. This was in fact true. The mothers and the children in this community differed markedly in this respect from the mothers and children in both the traditional and dualistic Mexican American communities.

Cognitive Styles and Culturally Distinct Socialization Styles

How can cultural and community differences in cognitive style be explained? The answer is suggested by the finding of two important studies. The first is Dyk and Witkin's 1965 study of socialization practices and cognitive style. These researchers conducted extensive home interviews with the parents of children who had scored in either a pronounced field independent or field sensitive manner on the Portable Rod and Frame Test. The parents of field independent and field sensitive children differed from one another in several ways. Some of the most clear-cut differ-

ences were revealed in studying the closeness of the relationship of the mother to her child. The research findings suggested the following characteristics were particularly common among parents whose children were field sensitive:

1. Relationship between mother and child is strong. Emphasis is placed on child's identification with the family.

2. Mother stresses culturally approved kinds of social behavior and, as well, respect for convention. The child is encouraged to emulate adult behavior in early life.

3. Mother involves others, especially members of the family, in socializing the child and sees her Meaning in life as tied to the child. She appears to live vicariously through the life and activities of the child.

A closely related study has been reported by Dershowitz (1971). The research compared cognitive styles of New York boys from Orthodox Jewish families to Anglo-Saxon Protestant boys living in New York. The study was based in part on the assumption that the Orthodox Jewish family embodies many of the qualities which Dyk and Witkin found in the socialization experiences of field sensitive children. Specifically, Dershowitz characterized the Jewish family as closely knit. In contrast to the father (who is only minimally involved in child rearing), the mother is dominant and encourages her children to form a close relationship with her. These interpretations led Deershowitz to predict that Orthodox Jewish boys would score in a more field sensitive direction on measures of cognitive style than the Anglo American boys. The findings supported this prediction.

An additional aspect of the study deserves mention. Dershowitz compared the first two groups of subjects to a third group of boys from more assimilated Jewish families. Dershowitz reasoned that the socialization practices of the assimilated Jewish families would have much in common with the socialization practices of Anglo-Saxon Protestant middle class families. For this reason, he expected that the test scores of these boys would be intermediate–less field sensitive than the Orthodox Jewish boys, but less field independent than the Anglo boys. This expectation was borne out by research findings.

The research studies of both Dershowitz and Dyk and Witkin parallel the authors' research with Mexican Americans described earlier in this manual. Children from "traditional" Mexican American families were found to be the most field sensitive. Field independence was more evident among Mexican American children whose families lived in communities where Mexican Americans are rapidly becoming assimilated into the American middle class. Children from a partly traditional, partly assimilated Mexican American community tended to occupy an intermediate position with respect to cognitive style.

Other Consequences of Culturally Distinct Socialization Practices

We mentioned earlier that cognitive style is a convenient concept for pulling together communication styles, incentive-motivational styles, and ways of perceiving and thinking. Up to this point we have been concerned with the fourth aspect of cognitive styles, ways of perceiving and thinking. This topic has actually been approached only from the standpoint of perceptual tests (such as the Rod and

Frame). e know that cultural experiences influence children's performance on such tests. How does culture affect children's performance on other aspects of cognitive style?

Researchers have provided us with several interesting answers to this question. One research team has found that, regardless of socioeconomic status, Jewish children are superior on tests of verbal ability but not superior on tests of space conceptualization (where they perform less well than children of other ethnic groups). The reverse (superiority in space ccnceptualization) tends to be true of Chinese children. After comparing differences between Chinese, Jewish, Negro, and Puerto Rican children, the researchers concluded that "Different kinds of intellectual skills are fostered or hindered in different cultural environments" (Lesser, Fifer, and Clark, 1965; see also Stodolsky and Lesser, 1967).

This same conclusion is also supported from studies conducted with Mexican American children (Price-Williams and Ramirez, 1971). In one study the School Situation Picture Technique (described in Manual No. 2) was administered to Mexican American and Anglo American children in a fourth grade Catholic parochial school. The stories told by the Mexican American children were longer than those told by the Anglo American children. In addition to telling longer stories, the Mexican American children mentioned more characters than did the Anglo American children. The stories of Mexican American students more often referred to close relationships between story characters. The Anglo American children less often described the story characters as caring for one another and seeking comort from one another. The story characters described by the Mexican American children used teachers and adults as models of their own behavior. The achievement themes of the Mexican American and Anglo American children also differed. The stories told by Mexican American children emphasized cooperative achievement. The achievement typically benefited the character's family and community. By comparison, Anglo American students tended to tell stories in which the characters achieved by themselves and largely for themselves. Important cultural differences in incentive-motivational styles were also identified in the last manual (p. 24). (research conducted by Kagan and Madsen indicated that Anglo American children tend to be more competitive than Mexican American children who tend to be more cooperative.)

In another part of the Price-Williams study, children were asked to identify the names of their three best friends and then to "free associate" to these names. For each of the friends, they were allowed ten seconds in which to pronounce the words that the name of the friend brought to mind (e.g., "tall," 'friendly'). Anglo American children gave fewer associations per name than did the Mexican American children. In addition to giving more associations, the Mexican American children used fewer synonomous or overlapping terms than did the Anglo American children. The free associations of the Mexican American students covered more categories (such as physical characteristics, social traits, etc.).

This research provides an interesting sample of Lesser's idea that "Different kinds of intellectual skills are fostered or hindered in different cultural environments." With its emphasis on personal relationships and sensitivity to other people, the Mexi-

can American culture seems to foster the development of elaborate and complex ways of interpreting the social environment. The elaborate interpretations of the social environment are complemented by greater needs to afiliate with others, to care for (and be cared for by) others, and to model oneself after others. (This suggests that Mexican American children prefer a teacher-learner relationship in which the teacher provides careful guidance for the student.) Achievement, in turn, is usually viewed as a cooperative effort centered around common goals.

These examples suggest that culture clearly influences a person's way of perceiving the environment and thinking about it. Cultural experiences also establish preferred ways of relating to other people. The concept of "cognitive style" provides us with a useful way of summarizing the many ways in which cultural experiences shape approaches to living.

Conclusion

We have seen that unique "styles" are associated with different cultures. These styles encompass patterns of intellectual strengths, human relational styles, ways of responding to incentives, and perhaps most importantly, styles of interpreting the world. Cultural differences in these cognitive styles can be traced to particular kinds of socialization practices (which, in turn, are closely tied to values).

From the standpoint of cognitive styles, one of the most crucial aspects of child rearing concerns separation of children from their mothers and families. Field independence is common among children whose families emphasize development of a separate (nonfamily centered) identity. The families of field sensitive children stress closeness between children and parents and child's identification with the family.

Given this picture, it is not surprising to find that Mexican American children typically score in a field sensitive direction on tests of cognitive style. As does the Orthodox Jewish family, the traditional Mexican American socialization pattern is emphasis on loyalty to the family and on a close interpersonal relationship between the mother and children. The traditional Mexican American socialization style can be summarized in the following way: (1) Strictness in child rearing, encouraging respect for, and obedience to, authority figures, age, and institutions (especially to the family and the Catholic Church). The strictness, however, is tempered by the nurturance and protectiveness of the mother and older siblings; (2) Loyalty to the teachings of the parents, stressing an obligation to protect members of the family and to enhance the reputation of the family in the community. These experiences result in the child's wanting to achieve for the benefit of the family. Thus, the Mexican American child is encouraged to be responsible and independent, and also assertive, as long as he is achieving for the family or protecting it. While the mainstream American is usually encouraged to establish an independent identity, the Mexican American is encouraged always to view himself as part of the family. He is reared in an atmosphere which emphasizes the importance of interpersonal relationships and the worth of the individual. He consequently develops great sensitivity to social cues and to human environment in general.

It would be a mistake, however, to think that all Mexican Americans share these experiences or that

all Mexican Americans are field sensitive. As explained in Manualk No. 2, there is a great diversity among Mexican Americans. This point is further documented by the community differences found by the authors among Mexican Americans in both cognitive style and child-rearing practices.

Planning culturally democratic educational environments must follow from an appreciation of this diversity. How, then, is a teacher to plan teaching and curiculum for different Mexican American children? If cognitive style determines a child's preferred learning style, how is the teacher to determine the child's cognitive style? The following manual provides the answers to these questions.

From: Pam Harper, *New Approaches to Bilingual, Bicultural Education.* Austin, Texas: The Dissemination and Assessment Center for Bilingual Education, 1974.

A, an	un, una	un, une	某一
Able (adj)	capaz	capable	能夠
About (prep)	acerca de; aproximadamente	autour de, à peu près	大約
Above (1. over (prep) 2. preceding)	sobre; predecente	au dessus de, en haut; antècédent	在上；上方 1. 在…以上 2. 在先，在前
Accident	accidente	accident, m	意外之事
Across (prep)	a través de	à travers, d'un côte à l'autre	越過；由這邊到那邊
Act (vb)	funcionar	fonctionner, marcher	行動
Action (n)	función, funcionamiento	fonctionnement	行爲
Add (vb)	añadir, incluir	ajouter	增加

Adjust (vb)	ajustar, arreglar	régler, ajuster	調節，使適於
After (prep and conj)	después de (que)	après (que)	繼…之後
Again (adv)	otra vez, de nuevo	encore une fois; encore	再
Against (prep)	en contra de; junto a	contre; à côte de	反對
Agree (vb)	estar de acuerdo	être d'accord; accorder	同意
Aim (n)	objetivo	objectif, m.	目的
Air (n)	aire	aire, m.	空氣
All (adj)	todo	tout	所有的
Almost (adv)	casi	à peu près	幾乎

Along (prep)	por, a lo largo de	en avant	沿；循
Already (adv)	ya	déjà	早已
Also (adv)	también	aussi	也；亦
Aluminum	aluminio	aluminium, m.	鋁
Always (adv)	siempre	toujours	永遠
Among (prep)	entre	parmi	在…中
Amount (n)	importe, cantidad	quantité, f.; équivalent, m.	總數
And (conj)	y	et	和；及
Angle (n)	ángulo	angle, m.	角度

Another (adj)	otro	un (une) autre	又一；再
Answer (n and vb)	contestación; contestar	réponse (f); répondre, faire une réponse	回答
Any (adj)	cualquier	n'importe; n'importe lequel	任何一個
Anything (pron) anybody	algo; alguien	n'importe quel/qui	任何事物　任何人
Anywhere (adv)	en/por cualquier parte	n'importe où	任何地方
Apart (adv)	aparte; separadamente	à part, à l'écart	拆開
Arm (n)	brazo	bras, m.	臂
Around (prep)	alrededor de	autour de	環繞；在四週
As (conj) as—as	como; tan—como	comme; aussi — que	同樣　與……一樣

Ask (vb) ask for, ask (someone) to (do)	preguntar; pedir	prier, demander,	詢問　請求，請求某人做某事
Assembly (mec)	montaje	montage	組合
At (prep)	en, a	à; y; devant	在　；近
Automobile (n)	carro, automóvil	automobile, f.	汽車
Automotive (adj)	automotor	automotif	自動的
Avoid (vb)	evitar	éviter	避免
Away (adv)	lejos, a distancia	à l'écart; loin	在遠方；離開
Back (n); in — of	espalda; detrás de	dos, m. derrière, en arrière de	背部，背後　後面
Back (adv); Backward(s)	hacia atrás	en arrière	落後　向後

Back and Forth	de atrás para adelante	de long en large	来回
Bad; worse, worst	malo, peor	manvais, pire, le pire	不好的，更壊的，最壊的
Bag (n)	bolsa, saco	sac, m.	袋
Ball (n)	bola, esfera, globo	sphère, m.	球
Band (n)	banda, cinta	bande, f.; courroir, f.	隊；帶
Base (n)	base	base, f.; pied, m.	地基；基礎
Basic (adj)	básico	de base	基本的
Be (is, are, etc.)	ser, estar	être	是（第三人稱單數　第一、三人稱複數
Because (conj)	porque	parce que	因爲

Because of (prep)	por, a causa de	à cause de	因爲
Bed (n)	cama	lit, m.	床
Before (prep and conj)	antes, antes de	avant; avant que	在…之前
Behind (prep)	detrás de	derrière	在…之後
Belong (vb)	pertenecer	appartenir	屬於
Bench (working table)	mesa	banc m.; établi, m.	長櫈
Bend (vb)	torcer	courber, plier	彎；屈
Beside (prep)	al lado de	à côte de	在…之旁
Better	mejor	meilleur; mieux	比較好的

Between (prep)	entre	entre	在…中間
Big	grande	grand	大的
Bit (n); a bit (adv)	pedazo; algo, un poquito	morceau; un peu	少許　　少許
Bitter	amargo	âcre	苦的
Black	negro	noir	黑色的
Blade	hoja	lame, f.	刀口
Blank (adj)	en blanco	blanc; vierge	空白的
Block (n)	bloque	bloc, m.; masse, f.; souche, f.	一塊；兩條街間的距離
Blue	azul	bleu	藍的

Board (n)	tabla	planche, f.	厚紙板
Body	cuerpo	corps, m.	身體
Boil (vb)	hervir, hacer hervir	faire bouillir, bouillir	沸
Bone	hueso	os, m.	骨
Book	libro	livre, m.	書
Both (adj)	los/las dos	tous les deux	二；兩方的
Bottom (n); at the — of	fondo, en el fondo	fonds,m; au fonds de	底 ；眞正原因
Box (n)	caja	boîte, f.	箱；盒；匣
Brake (n)	freno	frein, m.	煞車

Branch (n)	rama	branche, f,	樹枝
Brass (n)	latón	cuivre jaune, m.	黃銅
Break (vb)	romper(se)	rompre	打破
Bridge (n)	puente	pont, m.	橋
Bright (adj)	brillante	brilliant; vif; clair	光明的
Bring	traer	apporter	帶來
Brown	pardo, castaño	marron; brun	棕色
Brush (n)	cepillo, escobillo	brosse, f.	刷子
Bulb (n), (electric)	bombilla	ampoule, f.	電燈泡

Build	construir	construire	建造
Building	edificio	immeuble, m.	建築物
Burn (vb)	quemar(se)	brûler	燃燒
But (conj)	pero, sino	mais	但是
Button (n)	botón	bouton, m.	鈕扣
Buy	comprar	acheter	買
By (at side of; means of)	al lado de; por, mediante	à côté de; avec	近於；沿；藉以
Call (n and v)	llamada; llamar	appel, m.; appeller	喊叫；呼喚；定名　呼聲 拜訪
Can (n)	lata	boîte, f.	罐

Can (v)	poder	pouvoir	能夠
Cap (n), (mech)	tapa, casco, gorra	chapeau, m.; capsule, f.	蓋；頂
Car (n)	carro, automóvil	voiture, f.; machine, f. (Fr Am)	有輪的車；汽車
Card (n)	tarjeta	carte, f.; fiche, f.	卡片
Care (n)	cuidado	attention, f.; précaution, f.	小心
Careful (ly)	cuidadoso; con cuidado	(avec) soin	小心的　小心地
Carry (vb)	llevar	porter, transporter	携帶；運送（動詞）
Case (n), in case	caja en caso de (que)	caisse, f.; boîte, f.; au cas où	事；例；情況；場合　預防；如果（例如：預防緊急事情，如果有一樁意外之事）
Catch (vb)	tomar, coger, agarrar	attraper, saisir, prendre	捉住

Cause (n and vb)	causa, razón; causar	cause, f.; raison, f; produire	原因；緣由
Caution (n); Caution!	precaución, cuidadao; ¡atención!	faire attention; attention	謹愼　警告！
Center (n)	centro	centre	中心
Certain (adj) (sure)	seguro	certain;　sûr	無疑的；確實的
Chain (n)	cadena	chaine, f.	鏈
Chair (n)	silla	chaise, f. siège, m.	椅子
Change (n and vb)	cambiar	changement, m; changer:	變更
Chief (adj)	principal	le plus important	主要的
Choose (vb)	elegir	choisir	選擇

Circle (n)	círculo	cercle, m.	圓，圓周
Class (n)	clase	classe, f.	種類；班；級
Clean (adj and vb)	limpio; limpiar	propre; ntttoyer, laver	潔淨的
Clear (adj)	claro; abierto; evidente	claire; transparent; lucide	清亮的
Clear (vb)	aclarar; limpiar	éclaircir; nettoyer	使乾淨
Clock (n)	reloj	horloge, m.; pendule, f.	鐘
Clockwise; anti-, counter-	en/contra el sentido de las mancillas del reloj	dans le sens des aiguilles d'une montre; en sens enverse	順時鐘移動方向地 反時鐘移動方向地
Close to (prep)	cerca de	près, tout près, tout contre	接近
Close (vb)	cerrar(se)	fermer; boucher	關閉

Cloth (n)	tela	tissu, m.	布
Clothes (n)	ropa	vêtements, m. pl.	衣服
Coat (n)	abrigo, saco; cubierta	manteau	外衣
Coat (of paint)	mano (de pintura)	couche, f.	塗一層漆
Cold (adj)	frío, fría	froid	冷的
Collar (n and mech)	cuello, collar	anneau; collier; collet, m.	環
Color (n)	color	couleur,f.	顏色
Come	venir, llegar	venir, arriver	來
Common (adj),	común	commun	普通的

Company (n)	compañia	compagnie, société	一群人；同伴
Compare (vb)	comparar	comparer	比較
Compress (vb	apretar	comprimer	壓縮
Condition (n)	condición	condition, circonstance, f.	條件
Container	envase	récipient, m.	容器
Control (n and vb)	control; controlar	contrôle, m.; contrôler	管理；支配；控制
Cook (n and vb)	cocinero; cocer, cocinar	chef, m.; faire la cuisine	厨子　烹調
Cool (adj)	fresco, fresca	frais	涼的
Cool (vb)	enfriar(se)	rafraîchir	使冷；冷卻

Copper (n)	cobre	cuivre,m.	銅
Copy (n and vb)	copia; copiar	copie, f.; copier	謄本　抄寫
Cord (n)	cuerda	corde, f.; fil, m.	索；弦
Corner (n)	esquina, rincón, ángulo	coin, m.	角；隅
Correct (adj)	correcto	juste	正確的
Cost (n and vb)	costo; costar	prix, m; coûter	腐蝕 價值；費用　值 需價
Count (vb)	contar	compter	数；點数；計算
Cover (n and vb)	cubierta, tapa; cubrir	couverture, f.; couvrir	蓋子　蓋起
Crack (n and vb)	grieta, romper(se)	fissure, f.; casser	裂縫　破裂

Cross (n and vb)	cruz; cruzar	croix, f.; traverser; se croiser	十字形；交叉路 交叉，作十字於；越過
Cup (n)	taza	tasse, f.	杯子
Curve (n)	curva	courbe, f.; courber	曲線
Cut (n and vb)	corte, incisión; cortar	coupure, f.; couper	割；切
Damage (n and vb)	daño; dañar	dommage; m. endommager	損害；損失
Danger (n)	peligro	danger, m.	危險
Dark (n)	oscuro, oscura	sombre	黑暗
Dead (adj); (also elect sense)	muerto, -a; descargado, desconectado	mort; éteint, a plat	死的 無電流通過的；未充電的
Deep (adj)	honda	profond	深的

Degree (n)	grado	degré, m.	度數
Design (n)	diseño, plan, proyecto	dessein, projet, m.	設計
Detail (n)	detalle	détail, m.	詳細
Diagram (n)	diagrama	diagramme, schéma, m.	圖樣
Different (adj)	distinto	différent	不同的
Direction (n)	dirección	direction, orientation, f; sens, m.	管理；監督；指揮；指導；方向
Dirty (adj)	sucio	sale	不潔的
Disconnect (vb)	desconectar, separar	détacher, découpler	使脫離
Distance (n)	distancia	distance, f.	距離

Divide (vb)	dividir	diviser, séparer	分割
Do	hacer	faire	做
Door (n)	puerta	porte, f.	門
Double (adj and vb)	doble; dolar, plegar	double, m.; doubler; replier	加倍的　使加倍
Down (adv and prep)	abajo, hacia abajo	en bas, vers le bas; au pied de	由上而下地　下循
Drain (n and vb)	desagüe; desaguar	tuyau d'égout; vider	使徐徐流出　水管；陰溝
Draw	dibujar	dessiner	畫
Drawer (n)	cajón	tiroir, m.	抽屜
Drawing (n)	dibujo, diseño	dessin, m.	畫圖

Drink (vb)	tomar, beber	boire	飲；飲酒
Drive	manejar	conduire	駕駛
Drop (n - liquid)	gota	goutte, f.	滴
Drop (vb)	caer; dejar caer	laisser tomber	滴下；跌倒；減低；過訪
Dry (adj)	seco	sec	乾的
Dry (vb) (make dry)	secar(se)	faire sécher, laisser sécher	使乾
Dust (n)	polvo	poussière, f.	塵埃
Each (adj and pron)	cada; cada uno	chaque; chacun	每；各個　各人；每人
Ear (n)	oído; oreja	oreille, f.	耳

Early (adj and adv)	temprano	de bonne heure, tôt	早；初 古代；開始
Easy	fácil	facile	容易的
Eat	comer	manger	吃
Edge (n)	filo, borde	bord, m.	邊緣；端；刀鋒
Either (adj); either-or (conj)	uno u otro; o—o	l'un ou l'autre; ou—ou	（二者之）任一；每一；二者（形容詞）抑；或
Electric, electricity	eléctrico; electricidad	élèctrique; élèctricité	電的；用電的；生電的，電；電力；電流
Emergency (n)	emergencia	état d'urgence, m.; crise, f	緊急事件
Empty (adj and vb)	vacio; vaciar	vide; vider	端點
End (n)	fin, extremidad	fin, f.; bout, m.	末了

Engine (n)	máquina, motor	moteur, m.	引擎
Enough (adj)	suficiente	assez	足夠的
Equal (adj)	igual	égal	相等的
Equipment (n)	equipo	outillage	裝備
Even (adv)	aun, hasta; aún	même	正；恰好；甚至
Every	todo	chaque; chacun de; tout	每
Everything (pron)	todo, toda cosa	tout	每樣事物
Example (n)	ejemplo	exemple, m.	例子
Except (prep)	excepto	sauf	除…以外

Explain (vb)	explicar	expliquer	解释
Explosion (n); explosive (n adj)	explosión; explosivo	explosion; explosif	爆炸 ；易炸的
Eye (n)	ojo	oeil, m. (sing); les yeux (plural)	眼睛
Eye (n—mech)	anillo	trou, m; boucle, f.	钊断
Face (n)	cara; faz	figure; surface	脸；面部
Fail (vb)	faller; dejar de funcionar	rater, manquer, faillir	失败
Fall	caer	tomber	落下
Far (adv); far from (prep)	lejos (de)	loin, loin de	遥遠地；遠非；絕非
Feel (vb trans and intrans.)	sentir (se)	toucher, sentir	感覺到　感覺

Few (adj)	pocos	peu de	很少的
Fill (vb); fill out (a form)	llenar; completar	remplir, remplir	填充 ；填好
Film (n)	película	film, m.	薄膜
Find	encontrar	trouver,	尋找
Fine (adj)	fino	fin, raffiné	卓越的；細緻的；晴朗的
Finger (n), (also mech. sense)	dedo; linguete	doigt, m; cliquet, m.	手指；指狀物
Finish (vb)	terminar	finir, achever, terminer	完成
Finish (n) (final treatment)	acabado	fini, m.	作成某種表面
Fire (n)	fuego; incendio	feu, m.; incendie ,m	火

First (adj); at first (adv)	primer(o), -a; al principio	premier; d'abord	第一的 ；起初
Fit (vb trans. and intrans.)	colocar; adjustar(se), caber en	s'adjuster à; s'emboîter, s'adapter	合宜 適合於
Fix (vb)	fijar; arreglar; reparar	rajuster, arranger; fixer.	使穩定；使固定；縛緊；釘牢；安排；整理；準備 修理
Flame (n)	llama	flamme, f.	火焰
Flat (adj)	llano	plat	平直的
Floor (n)	piso, suelo	plancher, m.; parterre	地板 ；流動
Flow (n and vb)	flujo, corriente; fluir, correr	écoulement, m.; s'écouler, couler	河流；流動
Fly (vb)	volar	voler	飛
Fold (n and vb)	pliegue; doblar, plegar	pli, m.; replier	摺疊

Follow (vb)	seguir	suivre	跟隨
Following (adj)	siguiente	suivant	下列的
Food (n)	comida, alimento	nourriture, f.	食物
Foot	pie	pied	足
For (prep)	por; para	pour; par; à	爲了 如，例如：
Force (n and vb)	fuerza; forzar	force, f.; forcer	力；力量　強迫
Forget	olvidar	oublier	忘記
Fork (n incl. mech. senses)	tenedor; horquilla	fourchette, f.	叉
Forward (adv)	(hacia) adelante	en avant	繼續向前

Fraction (n)	fracción	fraction, f.	部分
Frame (n)	armazón, marca	bâti, m.	架子；構造
Free (adj) (not attached)	suelto	dégagé	自由的
Free (vb)	soltar	dégager	釋放
Freeze	helar (se)	gêler	凍結；結冰
Frequent (adj)	frecuente; común	fréquent, épandu	時常的
From (prep)	de, desde	de	從；自；由
Front (n); in front of (prep)	frente; en frente de	avant, m; devant, en face de	前面 ；在…的前面
Fuel (n)	combustible	plein	燃料

Full (adj)	lleno, -a	combustible	滿的
Gap (n)	abertura	brèche, f.; trou, m.	縫隙
Gas (n)	gas; gasolina	gaz, m.; essence	氣體；瓦斯
Get, (vb)	conseguir; hacerse	obtenir; devenir	得到
Give (vb)	dar	donner	给
Glass (n)	vidrio; vaso	verre, m.	玻璃；鏡子
Go (vb)	ir, marchar, funcionar	aller, fonctionner	去；行走
Good	bueno	bon	好，比較好些，最
Gray (adj)	gris	gris	灰色的

Grease (n); greasy (adj)	grasa; grasoso	graisse, f., lubrifiant, m.	油；脂肪
Green (adj)	verde	vert	綠的
Grind (vb)	moler; afilar	broyer	磨
Groove (n)	ranura	rainure, f.; gorge, f.	手套
Group (n)	grupo	groupe, m.	組；群
Grow	crecer; cultivar	augmenter, croître, grandir	生長
Guide (n and vb)	guía; guiar	guide	指導 指南；引導
Half (adj and n)	mitad; medio	demi, moitié, m.	
Hammer (n)	martillo	marteau, m.	手鎚

Hand (n)	mano	main, f.	手
Handle (n and vb)	asa, manija; manejar	poignée, f.; manivelle	把手　　持；操作
Hang (vb)	colgar	suspendre	懸；掛；吊
Hard (adj) firm, not easy)	duro; difícil	dûr; difficile	堅硬的
Have	tener	avoir	有
Have to (must)	tener que	devoir; il faut	必須
Head (n), (also mech. senses),	cabeza; portaherramientas	tête, f.; fer, m.; point, f.	頭，工具所敲打的部位；物體的突出部位，　鑽頭。
Hear (vb)	oír	entendre	聽見
Heat (n and vb)	calor; calentar	chaleur, f.; chauffer	熱，熱力　使發熱

Heavy	pesado	lourd	重的
Help (n and vb)	ayuda; ayudar	aide; aider	幫助
Helper (n)	asistente	aide,assistant, auxiliare, m	幫助者
Here (adv)	aquí, acá	ici	在這裏
High (adj)	alto	haut	高的
Hit (vb)	pegar	frapper	擊中
Hold, hold up/in	(re)tener, mantener, soportar	tenir; retenir, soutenir	握住 使團結；使停滯，壓抑，忍耐，抓住
Hole (n)	agujero	trou, m.	洞；孔
Hook (n)	gancho	croc, crochet, m.	鈎

Hot (adj)	caliente	chaud	熱的
Hour (n)	hora	heure, f.	小時
House (n)	casa	maison, f.; caille (créole)	房屋
How (ad /conj)	cómo, como	comment, comme	如何
However (ad)	sin embargo	de quelque manière que	無論如何
Hurt (vb)	lastimar	blessé; faire du mal, blesser	傷害
Ice (n)	hielo	glace, f.	氷
Idea (n)	idea	idée, f.	理想
If (conj)	si	si	假使；即使

Important (adj)	importante	important	重要的
In (adv and prep), -side	en; hacia adentro; dentro de	dans; dedans	在…內
Information (n)	información	renseignement, m.	消息；知識
Inspect (vb)	examinar	examiner	檢查
Instructor (n)	instructor	maître; maîtresse	教師
Into	a, en	dans, en	入，進入，放入
Introduction	introducción	introduction, f.	介紹
Iron (n)	hierro	fer, m.	鐵；鐵器；熨斗
Jaw (n)	mandíbula	mâchoire, f.	顎；頷

Job (n)	tarea	travail, emploi, m.	工作
Join (vb)	juntar	joindre, relier	接合
Joint (n), (esp. mech. senses)	juntura; articulación	assemblage, jointure, f.	連接物
Jump (vb)	saltar	sauter	跳
Keep (vb)	guardar, mantener	retenir; garder; conserver	保持
Key (n)	llave	clef, f.	鑰匙；解答；鍵；栓；楔
Kind (n)	clase, tipo	espèce, f.	種類
Knee (n)	rodilla	genou, m.	膝
Knife (n)	cuchilla	coûteau, m.	刀

Knock (vb)	golpear	frapper	打擊；敲；碰
Knot (n)	nudo	noeud, m.	結
Know (vb)	saber	savoir	知道
Large (adj)	grande	grand, fort, gros	大的
Last (adj and vb)	último;durar	dernier; durer	最後的；昨（晚）；上（週）去（年）；最近的（形容詞）持續
Late (adj)	tarde	en retard	遲的；晚的；近來的；已故的
Lead (metal)	plomo	plomb, m.	鉛
Leaf (n)	hoja	feuille, f.	樹葉；草葉
Learn (vb)	aprender	apprendre	學習

Leather (n)	cuero	cuir	皮革
Leave (vb)	salir (de); dejar	partir	離開
Left (adj)	izquierdo	gauche	左的
Leg (n)	pierna, soporte	jambe, f., support	腿；足
Length (n)	largura	longueur, f.	長；長度
Lesson (n)	lección	leçon, f.	功課
Let (vb) (allow)	dejar, permitir	permettre	讓；允
Letter (n)	carta; letra	lettre, f.	字母；書信
Level (n and adj)	nivel; a nivel horizontal	niveau, m.; de niveau	水平的 水平；水平線

Lid (n)	tapa	couvercle, m.	蓋
Lie	yacer	se trouver	臥；躺
Lift (vb)	levantar	lever, soulever	舉；起；擢升
Light (adj)	liviano	léger	光明的
Light (n)	luz	lumière, f.	光；光線；光亮；光源；光度
Light (vb)	encender; iluminar	éclairer	點燃；使發亮
Like (prep)	como	comme	像；似；如
Limit (n)	límite	limite. borne, f.	界限
Line (n)	línea	ligne, f.	線；直線

Lip (n)	labio	lèvre, f.	唇
Liquid (n)	líquido	liquide, m.	液體物
List (n)	lista	liste, f.	表；單；冊；據
Listen (vb)	escuchar	écouter	傾聽
Little (adj)	pequeño; poco	petit; peu de	小的
Load (n)	carga	charge,-f.	負荷
Lock (n and vb)	cerradura; cerrar	serrure, f.; fermer à clef	鎖　把…關起來
Long (adj)	largo	long	長的
Look (v)	mirar	regarder	看；望

Loose (adj)	flojo	détaché, libre	未予束縛的；寬大的；不牢的
Lose (vb)	perder	perdre	失；遺失
Lot (n); a lot of, lots of	mucho (s)	beaucoup de	全部　許多
Loud (adj)	ruidoso	fort	高聲的
Low (adj)	bajo	bas	低的；矮的
Lubricate (vb)	lubricar	lubrifier	潤滑
Machine (n)	máquina	machine, f.	機器
Make	hacer, fabricar	faire, fabriquer	做；使之；安排；得
Man	hombre	homme	男子

Many, more, most	muchos, as; más; la mayor parte de	beaucoup de	許多的；更多的；最多的
Mark, (n and v)	marca; marcar	marque, f; marquer	符號；記號　記分數於
Market	mercado	marché	市場
Match (fit together)	ajustar; corresponder	egaler, harmonisir	配合；相等
Material	material; tela	matériel	物質
May	poder	pouvoir	可能；可以；願；欲
Method	método; por medio de	méthode	方法；工具；手段　以；藉
Mean (vb)	significar	signifier	意欲；意謂　現在式　過去式　過去完成式
Meaning (n)	significación	sens, m.	意義

Measure (vb)	medir	mesurer	量；計；測度
Measurement (n)	medida	mesure	量度方法；測量
Mechanic, mechanics (n)	mecánico; mecánica	mécanique, f.	機械師　　力學；機械學
Mechanical (adj)	mecánico	mécanique	機械上的
Meet (vb)	encontrar(se)	joindre, rencontrer	相遇
Melt (vb)	fundir(se)	faire fondre, fondre	溶化；鎔化
Metal (n and adj)	metal; metálico	métal, m.; métallique	金屬　金屬製的
Middle (n)	medio, centro	milieu, m.	中間
Minute (n)	minuto	minute, f.	分鐘

Mistake (n)	error	faute, f.	錯誤
Mix, mixture (n)	mezclar; mezcla	mélange, m.	混合（動詞）混合，混合物
Motion (n)	movimiento	mouvement, m.	運動；動作
Mouth (n)	boca	bouche, f.	口
Move (vb); (trans. and intrans)	mover (se)	bouger	移動…的位置；感動
Much, more, most (adj)	mucho; más; la mayor parte de	beaucoup de	多的；更多的；最多的
Multiply (vb)	multiplicar	multiplier	增加；乘
Nail (n)	clavo	clou, m.	釘
Name (n)	nombre	nom, m.	名字；名稱

Narrow (adj)	estrecho	étroit	狹窄的
Near (adv and prep)	cerca (de)	tout près, près de	近；幾乎　接近
Necessary (adj)	necesario	nécessaire	必要的
Neck (n)	cuello	cou, m.	頸項
Need (vb)	necesitar	avoir besoin de	需要
Needle (n)	aguja	aiguille, f.	針
Neither (adj), neither - nor-	ninguno; ni — ni	ni — ni	皆不　既非…亦非
Net (n)	red	filet, m.	網
Never (adv)	nunca	jamais	未曾地，永不地

New (adj)	nuevo	nouveau, nouvelle	新的
Next (adj)	próximo; siguiente	prochain	其次的
Night (n)	noche	nuit, f.	夜晚
No (adj)	ninguno	pas de	沒有；不
Noise (n)	ruido	bruit, m.	噪聲
None (pron)	ninguno, nadie, nada	aucun, pas un seul	毫無
Normal (adj)	normal	commun	正常的
Nose (n)	nariz	nez, m.	鼻
Not (adv)	no	pas	不；未

Note (n and vb)	nota; anotar; observar	billet; noter; constater	筆記； 記 錄，注意
Nothing (pron)	nada	rien	無；零
Now (adv)	ahora	maintenant	馬上
Number (n and vb)	número, cantidad; contar	nombre, m.; compter	數；數字數目　標以號數
Nurse (n)	emfermera	infirmière, f.	護士
Nut (mech)	tuerca	écrou, m.	螺絲帽
Objective (n)	objetivo	objectif, m.	目的
Of (prep)	de	de	屬於；由…製成；關於
Off (prep)	de, desde	de	離開；除掉

Office (n)	oficina	bureau, m.	辦公處
Often (adv)	frecuentemente	souvent	時常地
Oil (n); oily (adj)	aceite; aceitoso	huile, f. huileux	油（名詞）含油的
Old (adj) (not new, former)	viejo; antiguo	vieux ancien	舊的
On (prep)	sobre, en	sur	在…上面
Once (adv), at once	una vez; en seguida	une fois; toute suite	一次地　立即
Only (adj and adv)	único; sólo	seul, -le; seulement	僅有的　祇；僅
Open (adj and vb)	abierto; abrir	ouvert; ouvrir	打開
Opposite (adj)	contrario; de en frente	en face	相對的

Or (conj)	o	ou	或且
Order (n), in order to	orden; pedido; para	ordre, arrangement, m.; pour	次序；定則　按照…排列
Other (adj)	otro	autre	其餘的
Out (adv); out of (prep)	fuera (de)	dehors; hors de	在外地　在外面
Outside (adj, adv and prep)	externo; afuera; fuera de	extérieur; à l'extérieur (de)	外面
Oven (n)	horno	fourneau, m.	烤爐
Over (prep)	sobre	sur, au dessus de	在上；過於…之上；超過
Pack (vb)	empacar; cargar	emballer, empaqueter	包裝
Package (n)	paquete	paquet, m.	包裹

Page (n)	página	page, f.	頁
Paint (n and vb)	pintura; pintar	peinture, f.; peindre	油漆
Pair (n)	par, pareja; dos	paire, f.	一雙
Paper (n)	papel	papier, m.	紙
Part (n)	parte	partie, f.	部份
Pass (vb)	pasar, ir	passer	通過
Pay (vb)	pagar	payer	付款
Pen (n)	pluma	stylo, m.	筆；鋼筆
Pencil (n)	lápiz	crayon, m.	鉛筆

Person (n)	persona	personne, f.	人
Picture (n)	cuadro	image, f.	畫；照片
Piece (n)	pedazo	morceau, m.	片；段
Pin (n)	alfiler, clavija	épingle, f.	釘；栓
Pipe (n)	tubo	tuyau, m.	管
Place (n and vb)	lugar; poner	endroit, m.; placer, mettre	地方
Plain (adj)	sencillo	clair, distinct	明白的
Plane (n), (geom. and tool)	plano; cepillo	surface, f. (geom); rabot,m.	平面
Plate (n)	plato; plancha	assiette, f., plaque, f.	盤；碟

Pocket (n)	bolsillo	poche, f.	衣袋
Point (n)	punto	pointe, f.	點；場所
Position (n)	posición	position, f.	位置
Possible (adj)	posible	possible	可能的
Power (n)	fuerza, energía	énergie	力量；動力
Practice (n and vb)	práctica; practicar	pratique, f. pratiquer,	實用　　實習
Press (n and vb)	prensa; apretar	pression, f.; appuyer sur	壓；榨　　印刷機；壓榨
Present (adj)	presente; actual	présent	出席的
Pressure (n)	presión	pression, f.	壓力

Price (n)	precio	prix, m.	價格	
Print (vb)	imprimir	empreinter	印刷	
Proper (adj)	adecuado; correcto	juste, convenable	正當的	
Pull (vb)	tirar, halar	tirer	拉	
Pump (n and vb)	bomba; infadar; bombear	pompe, f.; pomper	抽水機	用抽水機等汲水
Push (vb)	empujar	pousser	推	
Put (vb)	poner	mettre	放	
Put in	meter	mettre	穿戴	
Put together	componer	assembler, monter	放在一起；任命	

Question (n)	pregunta	question, f.	問題
Quick (adj)	rápido	vite	迅速的
Quiet (adj)	silencioso	silencieux	平靜的
Quite (adj)	completamente; bastante, muy	tout à fait, absolument	十分地
Rag (n)	trapo	chiffon, m.	破布
Rail (n)	riel; barra de apoyo	rail, m.; rampe, f.	欄干；鐵軌
Raise (vb)	levantar	relever, rehausser	舉起
Rate (n)	valor; proporción; tasa; tarifa	taux, m.; proportion, f.	比率
Reach (vb)	extenderse; alcanzar	atteindre	到；達

Read (vb)	leer	lire	読
Ready (adj); get ready	listo; preparar (se)	prêt, (se) rendre prêt	用意的　準備
Reason (n)	razón	raison	理由
Red (adj)	rojo	rouge	紅的
Regular (adj)	regular, constante	regulier	通常的
Relation (n), in relation to	relación; con relación a	rapport; en rapport avec	關係　關於
Remember (vb)	recordar	rappeler, se rappeler	追憶
Repair (n and vb)	reparación; reparar, arreglar	remonter, rassembler	修理
Rest (n) (remainder/others)	resto	les restes, m. pl.	其餘的人

Right (adj)	correcto, derecho	correcte; droit, f.	對的；右
Right (adv), (correctly)	correctamente	correcte	對地
Ring (n)	anillo	anneau, m.	圈
Ring (vb), (make ringing noise)	sonar	sonner	鳴
Rod (n)	vara	baguette, verge, f.	杆
Roll (n and vb)	rollo, cilindro; enrollar	rouleau, bâton, m.; rouler	滾；轉 一捲
Roof (n)	techo	toit, m.	屋頂
Rough (adj)	áspero; preparatorio	inégal, approximatif	粗糙的
Round (adj)	redondo, cilindrico, esférico	rond	圓的

Round (adv and prep)	alrededor (de)	tout autour; autour de	週行地　在…四週
Rub (vb); rub on, rub in	frotar; aplicar; hacer penetrar	frotter; faire pénétrer	摩擦　繼續下去不怕艱難，擦入
Rubber (n)	goma	caoutchouc, m.	橡皮
Ruler (n)	regla	règle, f.	尺；統治者
Run (vb)	correr	courir	跑；轉動
Run (vb), (function)	funcionar	fonctionner	
Run (vb), (operate)	manejar	conduire	
Rust (n and vb)	oxidación; oxidar (se)	rouille, f; se rouiller	銹　生銹
Safe (adj)	segura	sûr; sans risque	安全的

Safety (n)	seguridad	sécurité	安全
Same (adj)	mismo; igual	le même	同様的
Sample (n)	muestra	exemple, spécimen	標品
Saw (n), (tool)	sierra	scie, f.	鋸
Scale (n), (as ruler)	escala, proporción	échelle de proportion	比例
Scales (n), (for weight)	balanza	balance, f.	天秤
School (n)	escuela	école, f.	学校
Scissors (n)	tijeras	ciseaux, m. pl.	剪刀
Scrape (vb)	raspar, rascar	gratter	刮・削

Scratch (n and vb)	rascadura; rascar	raie, f.; gratter	抓痕　抓；搔
Screw (n and vb)	tornillo, atornillar	vis, f; fixer au moyen de vis	螺旋釘　扭螺旋
Seat (n)	asiento	siège, m.	座；坐位
Second (adj)	segundo	deuxième	第二的
See (vb)	ver	voir	看
Seem (vb)	parecer	paraître	好像
Sell (vb)	vender	vendre	賣
Serious (adj)	serio	sérieux	嚴重的
Service (n and vb)	servicio; mantener	service, m.; entretenir, réparer	服務　修理

Set (n)	juego	série, collection	套，組
Set (vb), (get hard)	endurecer	durcir	凝固
Set (vb) (put, place)	poner	poser	安放
Shake (vb)	sacudir	secouer	動搖
Shape (n and vb)	forma; formar	forme, f.; former	形狀　成形
Sharp (adj)	agudo, afilado	aigu	銳利的
Sharpen (vb)	afilar	aiguiser	使銳利
Shelf, shelves (n)	estante	rayon, m.	架
Shield (vb)	proteger	protéger, se protéger	防禦

Short (adj)	corto	court	短的
Shoulder (n)	hombro	épaule, f.	肩
Show, (vb)	mostrar, enseñar	montrer	顯示
Side (n): at the side of (prep)	lado; al lado de	côté; à côté de	邊　在…之邊
Sign (n and vb)	indicación, prueba; firmar	indice, m.; preuve, f,; signer	記號　簽字
Sit (vb)	sentarse	s'asseyoir	坐
Size (n)	tamaño, dimensión	dimension, f.	尺寸
Skill (n)	habilidad	habileté, compétence, f.	技藝
Skin (n)	piel	peau, f.	皮膚

Slip (vb)	resbalar	glisser	滑；溜
Slow (adj and adv)	lento; despacio	lent; lentenment, doucement	缓慢的
Small (adj)	pequeño	petit	小的
Smell (n and vb)	olor; oler	odeur, f.; sentir, flairer	嗅　嗅觉
Smoke (n)	humo	fumée, f.	烟
Smooth (adj and vb)	liso	regulier; égaliser, planer	光滑的　使平滑
So (conj), (with the result that)	así que	ainsi, de même	因此
Soap (n)	jabón	savon, m.	皂
Soft (adj)	blando, suave	doux, douce	软的

Solid (adj)	sólido	solide, ferme	固體的
Some	alguno	de la, du, des	少許
Someone	alguién	quelqu'un	某人
Something	algo	quelque chose	某物
Somehow	de alguna manera	quelconque	某種方法
Sort (n and vb)	clase; seleccionar	espèce, m; assortir	種類　分類
Space (n)	espacio	espace, m.; étendue, f.	空間
Spark (n)	chispa	étincelle, f.	火花
Speak (vb)	hablar	parler	說

Special (adj)	especial	spécial; particulier	特別的
Spill (vb)	derramar, verter	renverser	溢・溢出
Spoon (n)	cuchara	cuiller, m.	湯匙
Spring (n — mech)	resorte	ressort, m.	彈簧；春天
Square (n and vb)	cuadro; cuadrado	carré, m.; carré	正方形
Stack (n and vb)	hacina; hacinar	pile, empiler	堆　堆起
Stand (n)	plataforma	support, pied, m.	架
Stand (vb)	estar de pie; poner de pie	se tenir debout; être debout	站立
Star (n)	estrella	étoile, f.	星

Start (vb)	comenzar	commencer	開始
Station (n)	estación	station, f.	站
Stay (vb)	quedar	rester	逗留
Steam (n)	vapor	vapeur, f.	蒸氣
Steel (n)	acero	acier, m.	鋼
Stem (n)	tallo, tronco	tuyau, m.	莖；幹
Step (n), (stage in a process)	paso, etapa	étape, f.	步驟
Stick (vb)	meter, pegar; pegarse	piquer, fixer	刺；穿
Sticky (adj)	pegajoso	collant, gluant	黏的

Stiff (adj)	rigido, inflexible	raide	硬的
Still (adj)	fijo, inmóvil	calme, immobile, tranquille	静止的
Still (adv)	todavia	encore, toujours	仍然
Stop (vb - trans. and intrans.)	parar, interrumpir; pararse	arrêter, s'arrêter	止住　停止
Store (n)	almacén	magasin, m.	商店
Straight (adj and adv)	derecho; derecho	droit; droit, directement	直的
Stretch (vb)	estirar (se)	allonger, étirer	引申
Strike (vb)	golpear, chocar (con)	frapper, frappé	打；擊；敲
Strong (adj)	fuerte	fort	健壯的

Study (vb)	estudiar	étudier	求學
Such (adj)	tal	tel	如此的
Support (n and vb)	soporte; soportar	support, m.; supporter,	支持
Sure (adj)	seguro	sûr	確實的
Sweet (adj)	dulce	doux	甜的
System (n)	sistema	système, m.	系統
Table (n)	mesa	table, f.	桌；枱；平板
Take	tomar	prendre	拿
Take apart	desarmar	démonter	拆去

Take off	quitar	enlever	拆開
Take out	sacar	retirer	除去
Tall (adj)	alto	grand	高的
Tap (vb), hit lightly)	tocar, golpear (ligeramente)	donner un petit coup; taper	輕敲
Task (n)	tarea	tâche, besogne, m.	工作；作業
Teach (vb)	enseñar	enseigner	教
Tell (vb)	decir, contar	dire	告訴
Tension (n)	tensión	tension, f.	拉緊；緊張
Test (n and vb)	prueba; probar	épreuve, expérimenter	試驗；測驗

Than (conj)	que	que	比較；除…外
That (conj)	que	que	以致
That, those (adj and pron)	ese, etc.	ce, etc.	那　複數
The (article)	el, etc.	le, etc.	此；這
Then (adj), (at that time, next)	entonces; luego	alors, à cette heure	屆時；當時；然後；繼之；因此
There (adv), there is/are	allí, allá; hay	lá; il y a	在那裏
Thick (adj)	espeso, denso	épais	厚的
Thin (adj)	delgado, fino	mince	薄的
Thing (n)	cosa	chose, f.	物

Think (vb)	pensar	penser	想
This, these (adj and pron)	este, etc.	ce	這個
Though (conj)	aunque	même si, quand même	雖然
Thread (n)	hilo	fil, m.	線
Throat (n)	garganta	gorge, f.	喉；喉嚨
Through (prep and adv)	por, a través de; al través	à travers de, par; à travers	經過；自始至終
Throw (vb)	tirar, echar	lancer	投
Thumb (n)	pulgar	pouce, m.	姆指
Tie (vb)	atar	attacher, nouer	綁

Tight (adj)	apretado, ajustado, estrecho	serré, étroit	緊的
Time (n)	tiempo, hora	temps, m.	時間
Time (vb)	fijar el tiempo de	mesurer, calculer	記錄…時間
To (prep)	a, hacia	à	向某一方面；到
Toe (n)	dedo del pie; (mec) talón, salliente	orteil, m.	足指；趾
Together (adv)	uno con otro; al	ensemble	共同
Tongue (n)	lengua	langue, f.	舌
Too (adv), (also, too much)	también, además; demasiado	aussi; trop	也；太；極
Tool (n)	herramienta	outil, m.	工具

Tooth, teeth (n)	diente	dent, m.	牙
Top (n); at the top of (prep)	parte superior; encima de	dessus, m.; au dessus	頂　居於最高點
Touch (n and vb)	contacto; tocar	contact, m. toucher	觸覺
Toward (prep)	hacia	vers	向
Trouble (n)	dificultad	peine, f; ennui, m.	煩惱
Truck (n)	camión	camion, m.	卡車
True (n)	verdadero	vrai	確定的
Try (vb)	tratar (de)	essayer	嘗試
Turn (vb)	volver, dar vuelta a	tourner	旋轉

Twice (adv)	dos veces	deux fois	兩次
Twist (vb)	torcer	tordre	扭曲；旋轉
Under (prep)	de bajo de	sous	在…之下
Understand (vb)	comprender	comprendre	領會
Unless (conj)	a menos de que	à moins que	除非
Until (prep and conj)	hasta, hasta que	jusqu'à, avant; jusqu'à ce que	迄…之時；直到…時
Up (adv and prep)	hacia arriba (de)	en haut; vers le haut	向上地　向上
Use (vb)	usar	employer, se servir de	使用
Useful (adj)	útil	utile	有用的

Usual (adj)	usual, habitual	usuel, habituel	通常的
Vapor (n)	vapor	vapeur, f.	蒸氣
Very (adv)	muy	très	很；頗；甚；極
Vise (n)	prensa de tornillo	étau, m.	老虎鉗
Voice (n)	voz	voix, f.	聲音
Wait (vb), wait for	esperar	attendre	等待　等候
Wall (n)	muro, pared	mur, m.	牆
Want (vb)	querer, necesitar	vouloir	要；希望
Warm (adj)	caliente, caluroso	chaud	溫暖的

Wash (vb)	lavar (se)	laver	洗
Water (n)	agua	eau, f.	水
Way (n), (method)	modo, manera	moyen, m.	方法
Weak (adj)	débil, frágil	faible	弱的
Wear (vb)	desgastar (se)	user	磨損
Week (n)	semana	semaine, f.	星期
Weigh (vb)	pesar	peser	稱；稱…的重量
Weight (n)	peso	poids, m.	重；體重；法碼
Weld (vb)	soldar	souder	銲接

Welding (n)	soldadura	soudure, f.	銲接；接合處
Well (adv)	bien	bien	好
Wet (adj)	mojado, húmedo	mouillé	濕的
What (interrog. adj or pron)	¿qué?; lo que	quoi?; ce que	什麼
Wheel (n)	rueda	roue, f.	輪子
When (adv and conj)	¿cuándo?; cuando	quand; quand	在…時；在…的時候
Where (adv and conj)	¿dónde?; donde	oú; où	在那裏
Which	que	que, ce qui, ce que	那一個
Which? — one?	qué, cuál	quel, lequel	那一個；那些；誰

While (conj)	mientras	tandis que	當…的時候
White (adj)	blanco	blanc	白的
Who (pron · inttrrog. and relat.)	¿quién (es)?; que, quien (es)	qui; celui qui,celui que	誰；何人
Why (adv and conj)	¿por qué?; ¿para qué?; porque	pourquoi, pourquoi	爲什麼
Wide (adj)	ancho	large	寬的
Will (auxiliary verb)	ir (plus infinitive)	aller (going to do it)	將要
Wind (vb)	arrollar	remonter	纏繞
Window (n)	ventana	fenêtre, f.	窗
Wing (n)	ala	aile, f.	翼

Wipe (vb)	enjugar	essuyer	擦；拭
Wire (n)	alambre	fil métallique, m.	金屬線
With (prep), (by means of)	con; por medio de	avec	以；用；同；偕
Within (prep)	dentro de	dans	在…之內
Without (prep)	sin	sans	無；以外；在外部，
Woman	mujer	femme	婦女
Wood (n)	madera	bois, m.	木
Wooden (adj)	de madera	de bois, en bois	木製的
Word (n)	palabra	mot, m.	語；言；文字；所說的話

Work (n and vb)	trabajo;trabajar, funcionar	travail, emploi, m.; travailler	工作
Write (vb)	escribir	écrire	写
Wrong (adj and adv)	incorrecto; incorrectamente	mal	不適當的
Year (n)	año	année, f.	年
Yellow (adj)	amarillo,	jaune	黃色的
You	tú, usted	tu vous	你
Your	tu, su	votre	你的